

05 MAY 2005

10/534043

PATENT  
4456-0104PUS1

IN THE U.S. PATENT AND TRADEMARK OFFICE

Applicant: Nobuo SAKAGUCHI Conf.:  
Appl. No.: NEW Group:  
Filed: May 5, 2005 Examiner:  
For: TRANSGENIC MAMMAL CARRYING GANP GENE  
TRANSFERRED THEREINTO AND UTILIZATION  
THEREOF

PETITION UNDER 37 C.F.R. § 1.84(a)(2)  
TO ACCEPT COLOR DRAWINGS AND/OR PHOTOGRAPHS

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

May 5, 2005

Sir:

Applicant hereby petitions that color drawings under 37 C.F.R. § 1.84(a)(2) be accepted in the above-identified application.

Color drawings are necessary as they are the only practical medium by which the subject matter of the present application can be disclosed.

1. Fee Payment (37 C.F.R. § 1.17(h)):

- ☒ A check in the amount of \$130.00 is enclosed.  
☐ Please charge Deposit Account No. 02-2448 in the amount of \$0.00. This form is submitted in triplicate.

2. Color Drawings

05/13/2005 MAYPAGE 00000051 10534043

01 FC:1434

130.00 CP

Three (3) sets of color drawings are provided, and are believed to be of sufficient quality that all details will be reproducible in black and white in the printed patent.

3. Amendment to the Specification

A Preliminary Amendment is being submitted concurrently herewith, providing reference to the color drawings in the first paragraph of the brief description of the drawings.

It is noted that black and white photocopies of any color drawing or photograph are no longer required under 37 C.F.R. § 1.84(a)(2)(iii) as of October 1, 2001.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

BIRCH, STEWART, KOLASCH & BIRCH, LLP

By   
Gerald M. Murphy, Jr., #28,977

P.O. Box 747  
Falls Church, VA 22040-0747  
(703) 205-8000

GMM/smt  
4456-0104PUS1

Attachment(s)

Fig. 1

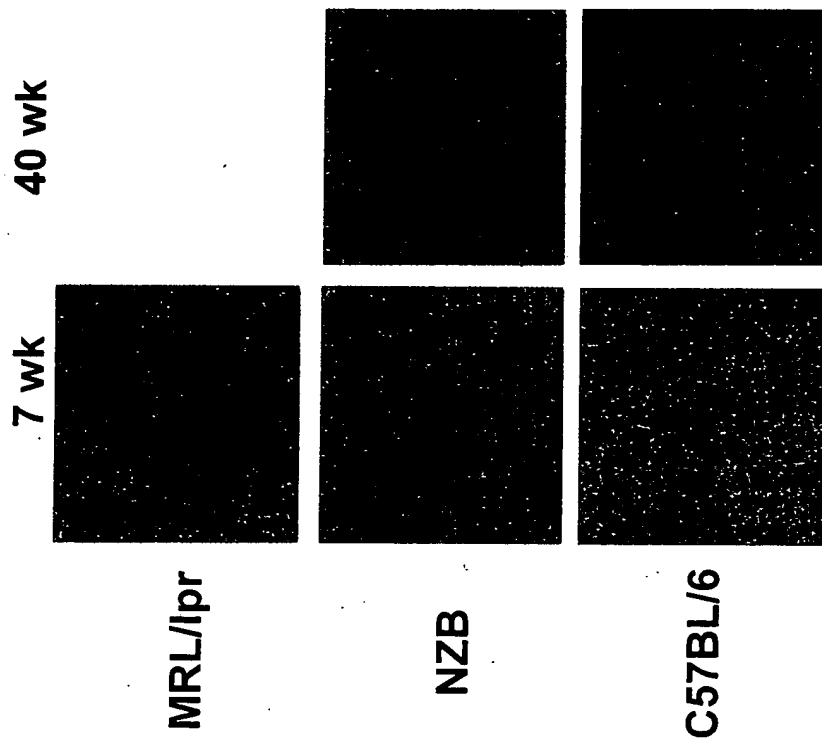


Fig. 2

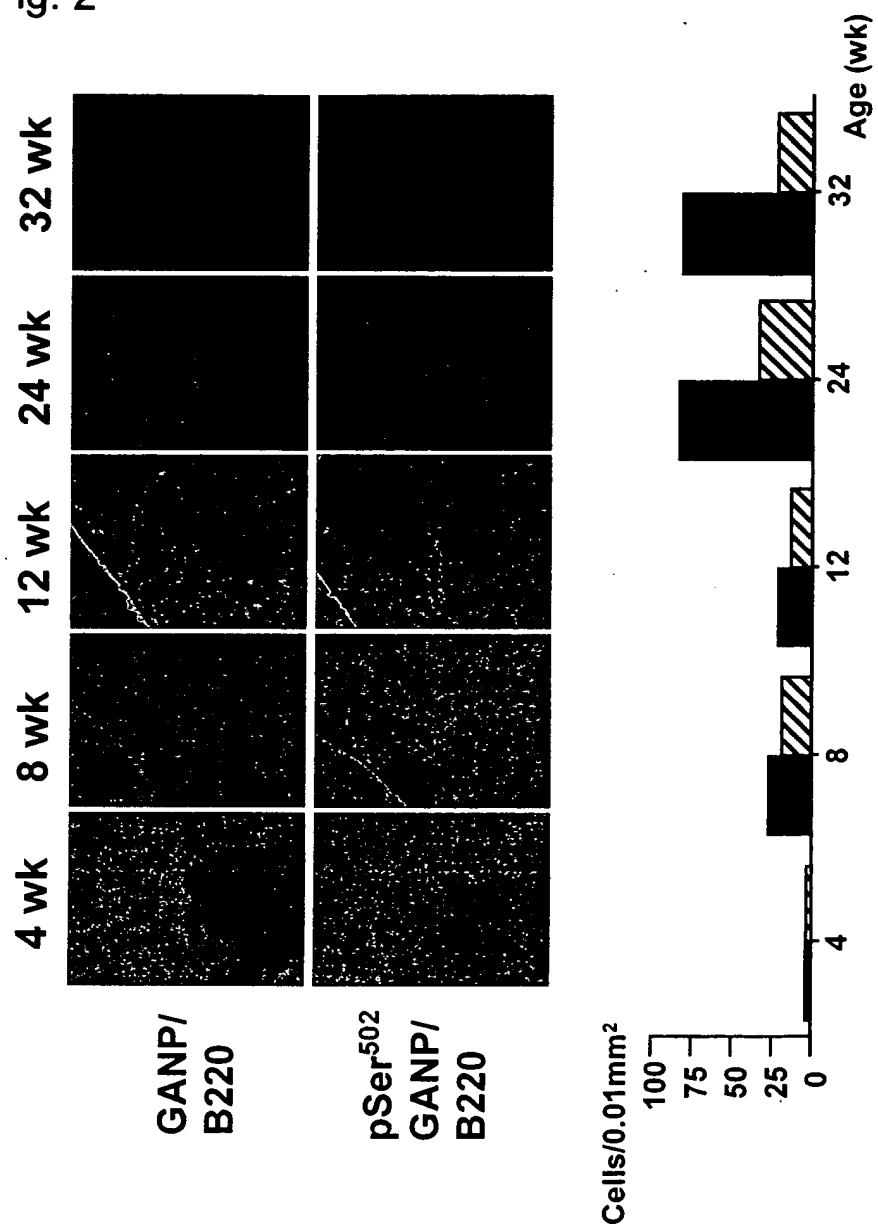


Fig. 3

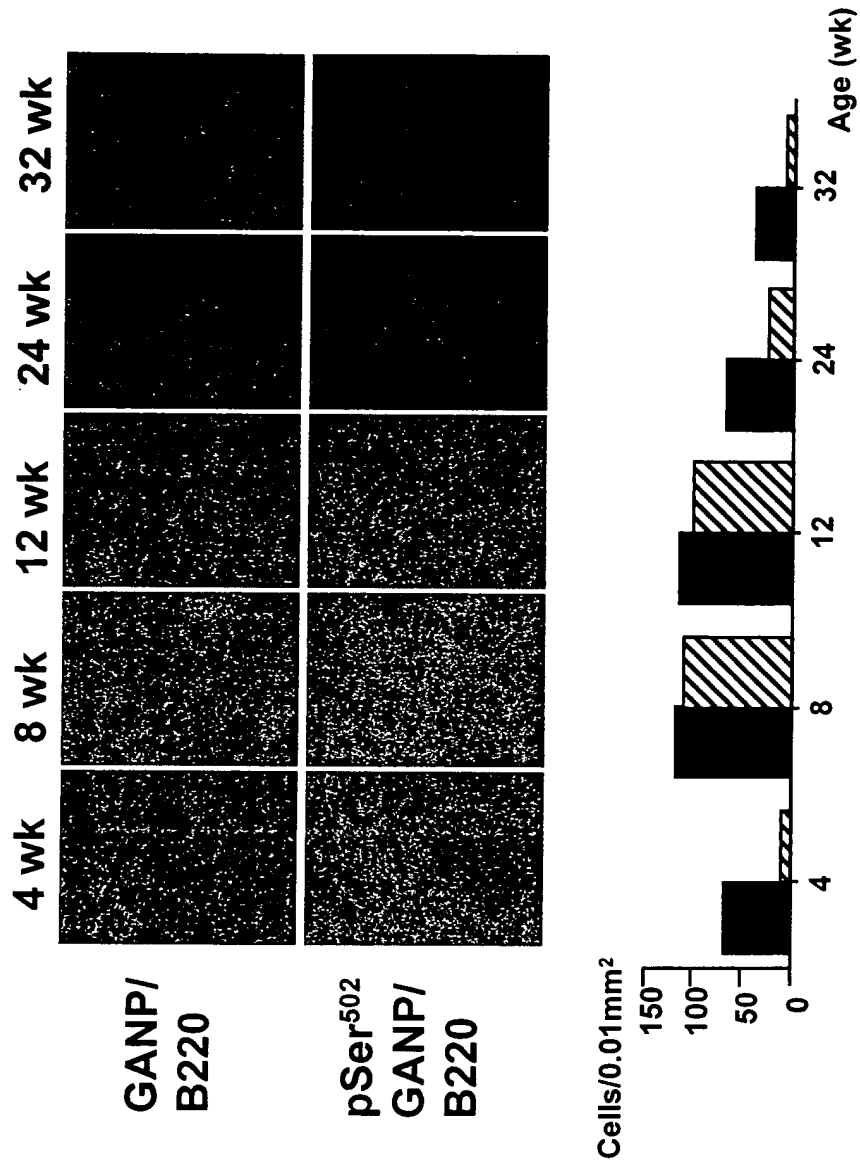


Fig. 4

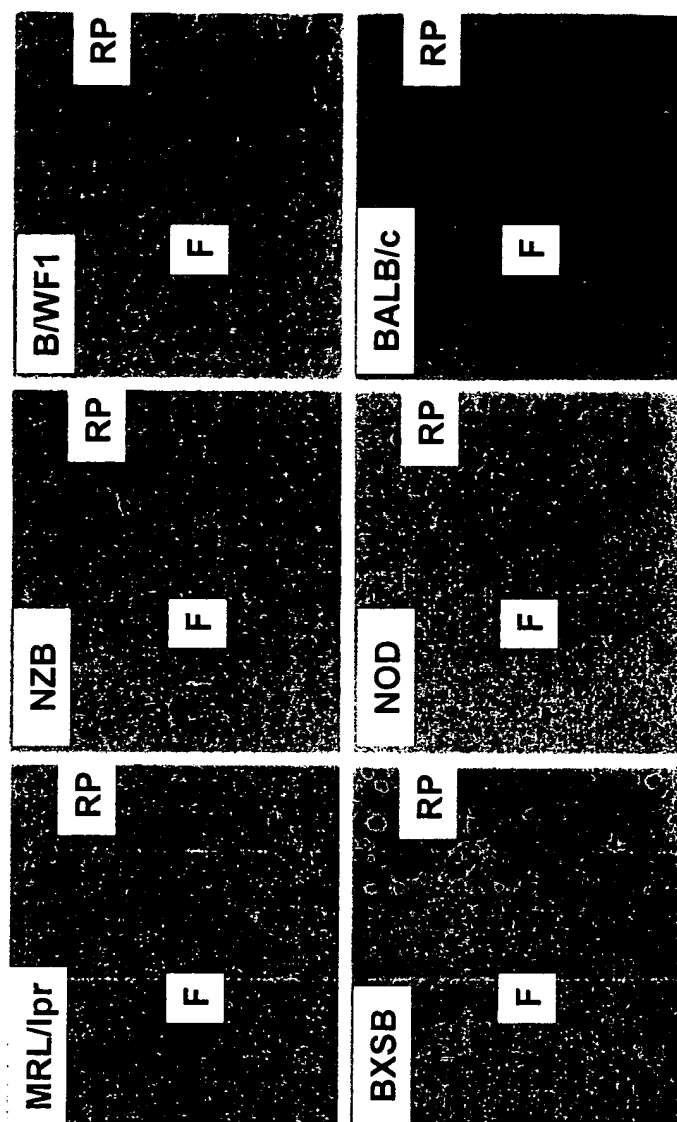


Fig. 5

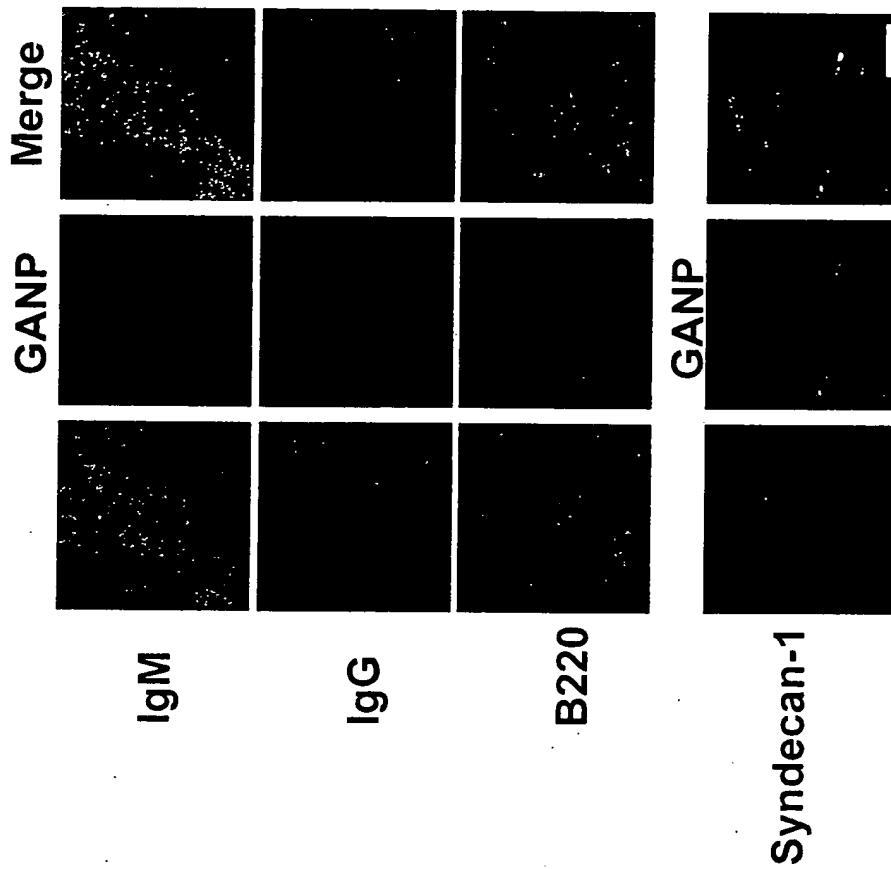


Fig. 6

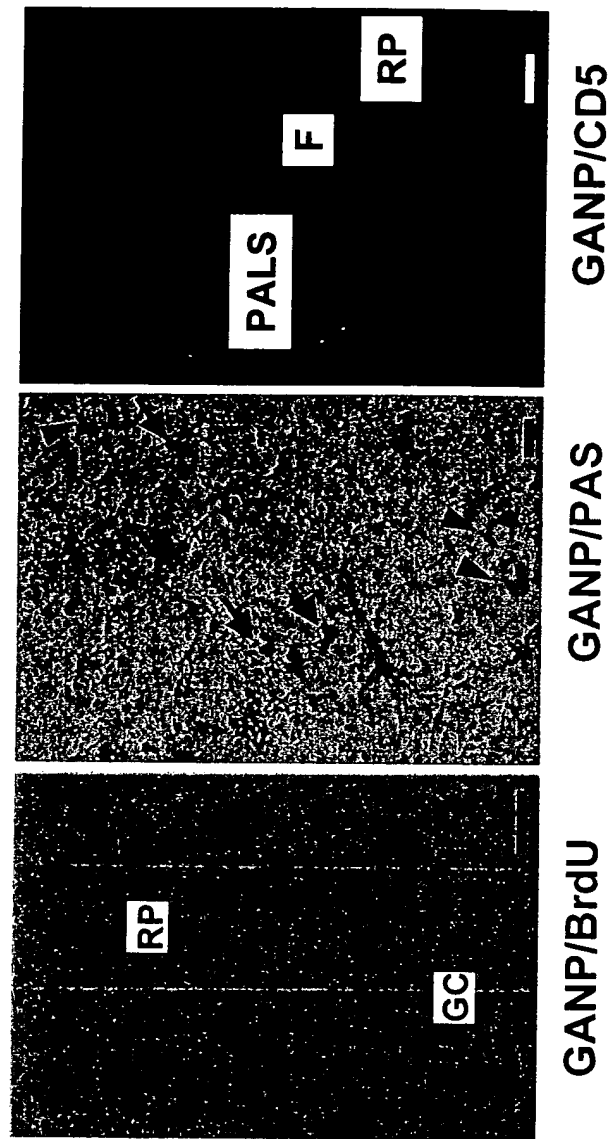




Fig. 7

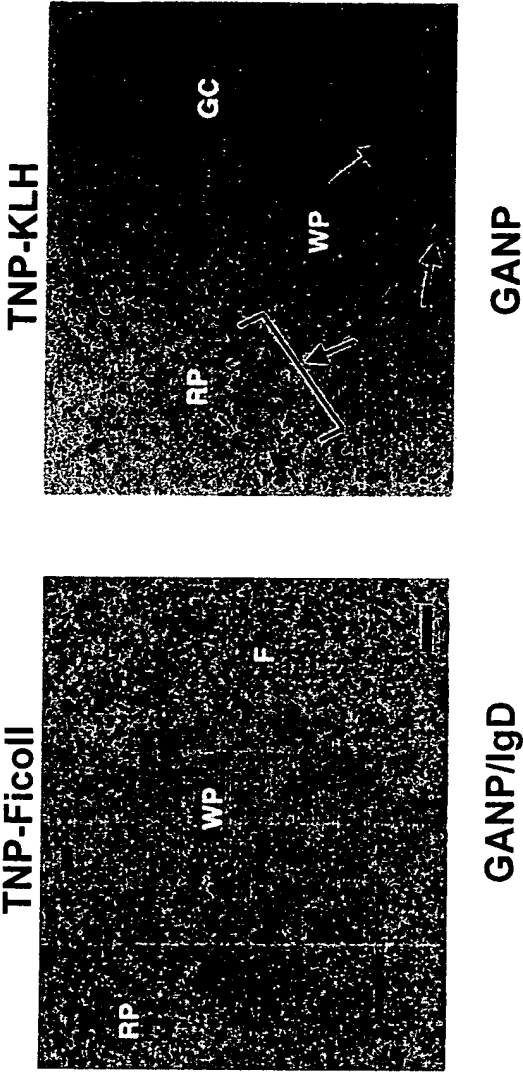


Fig. 8A

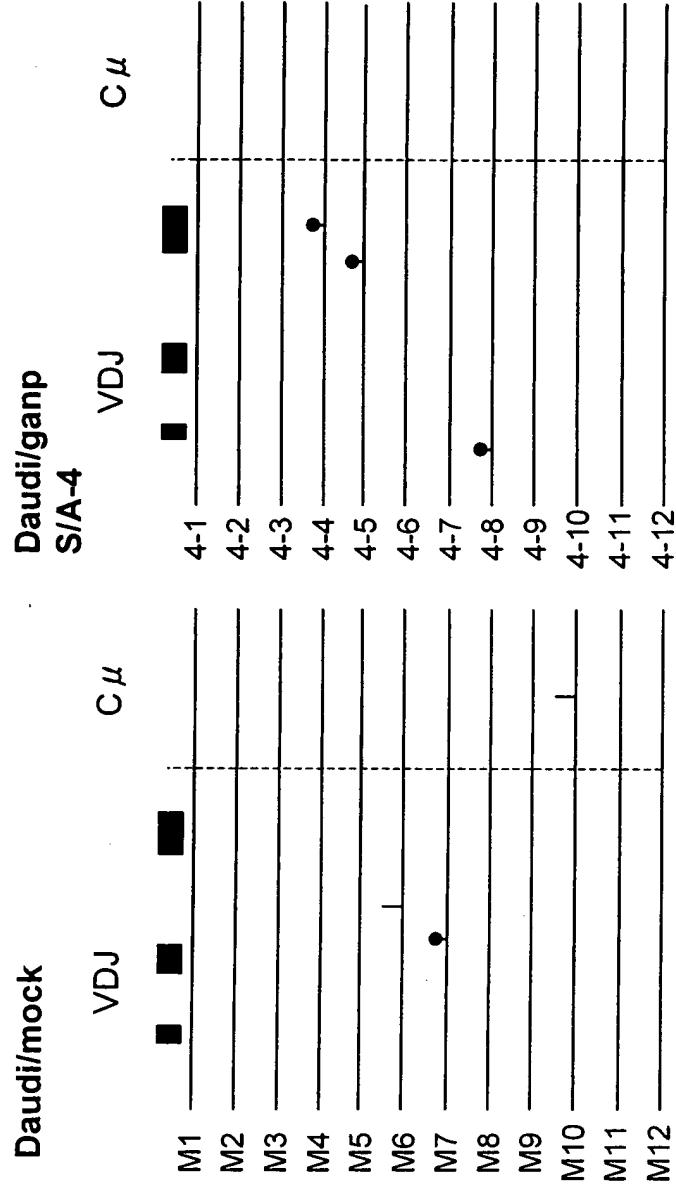


Fig. 8B

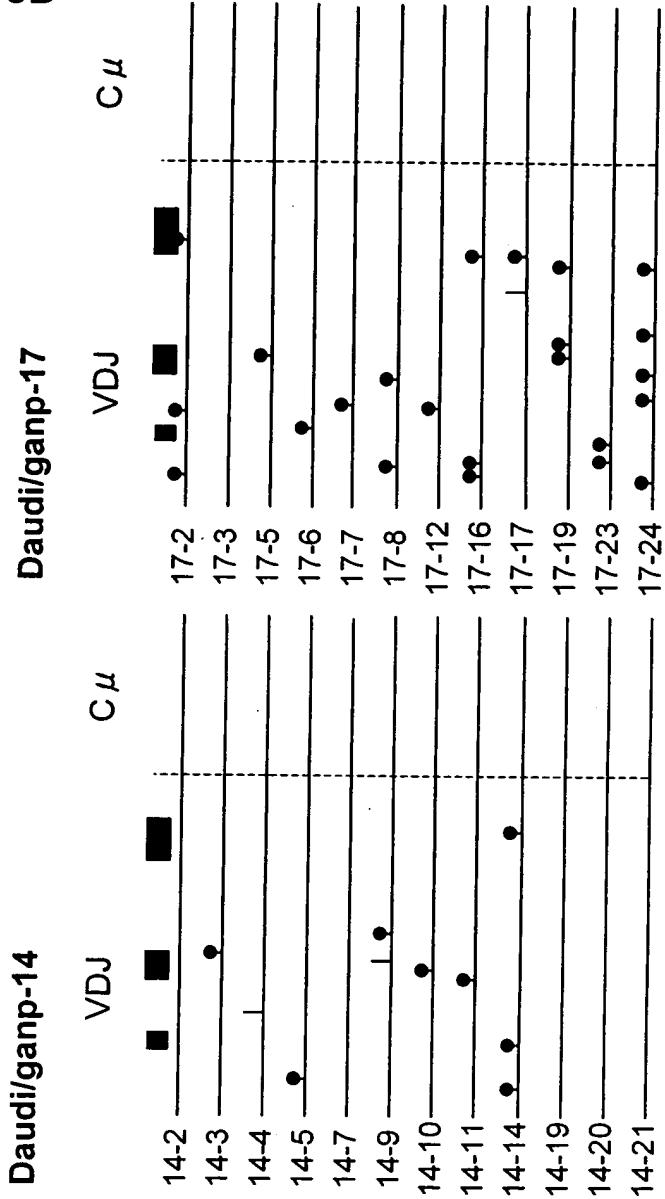


Fig. 8C

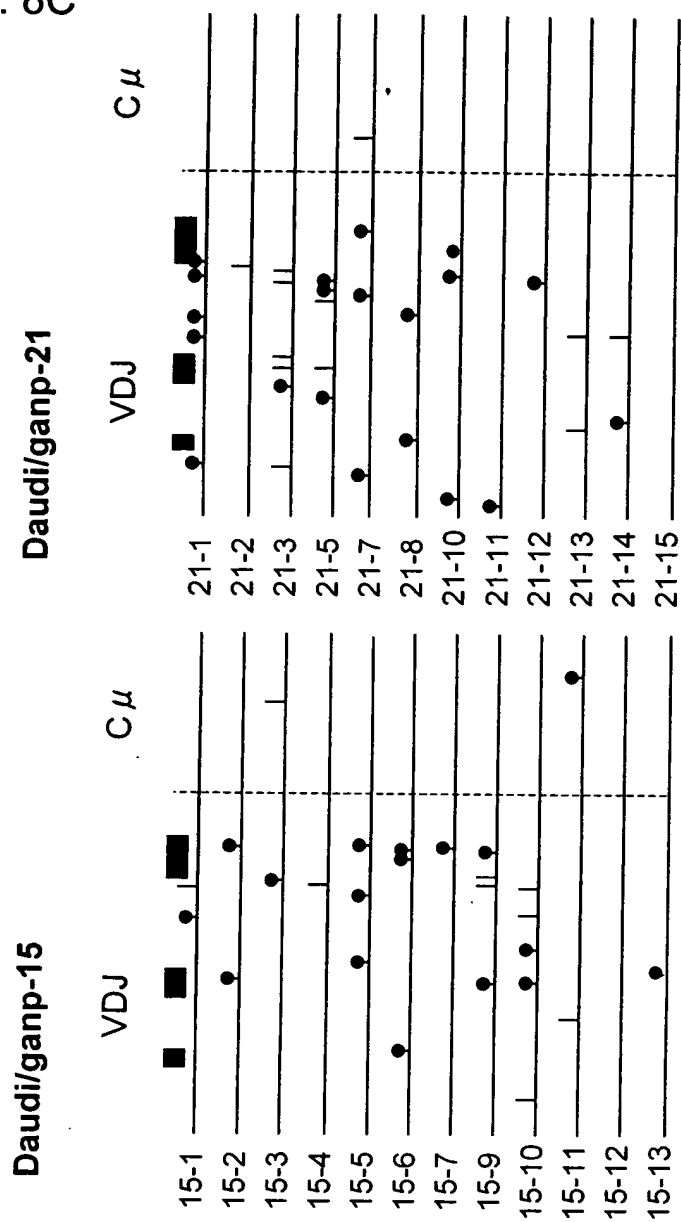


Fig. 9A

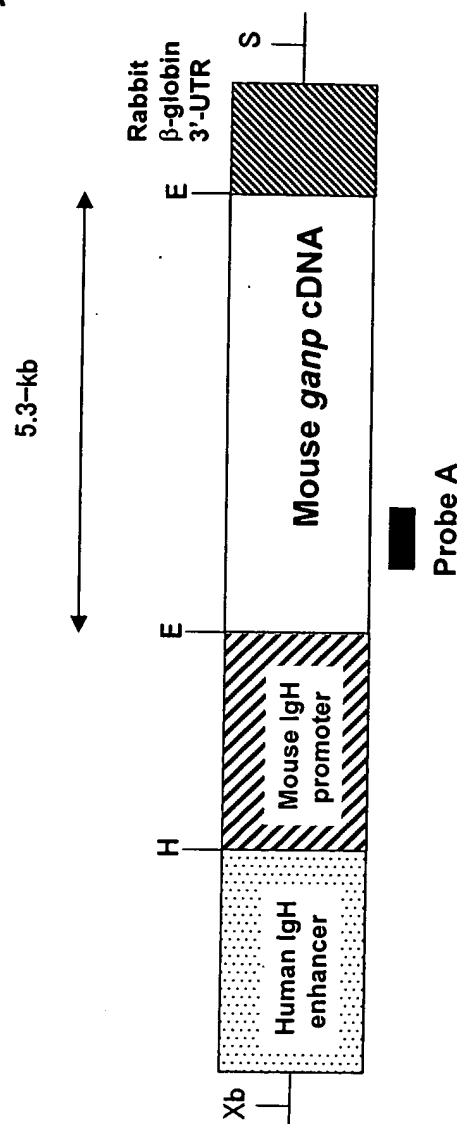


Fig. 9B

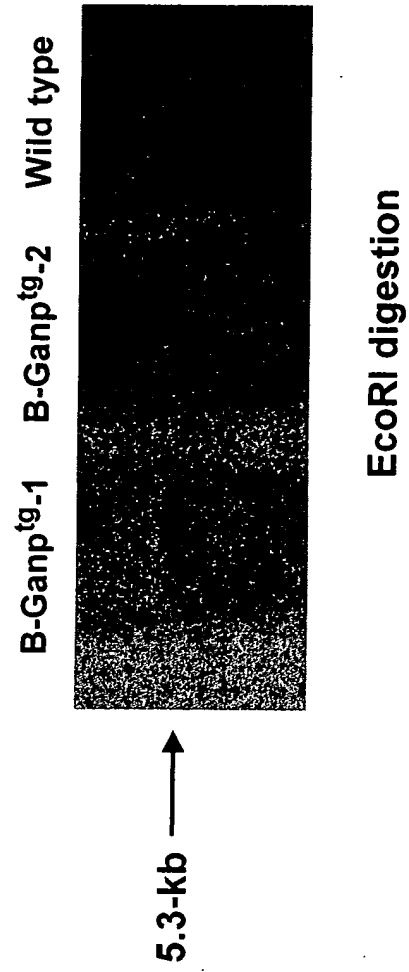


Fig. 9C

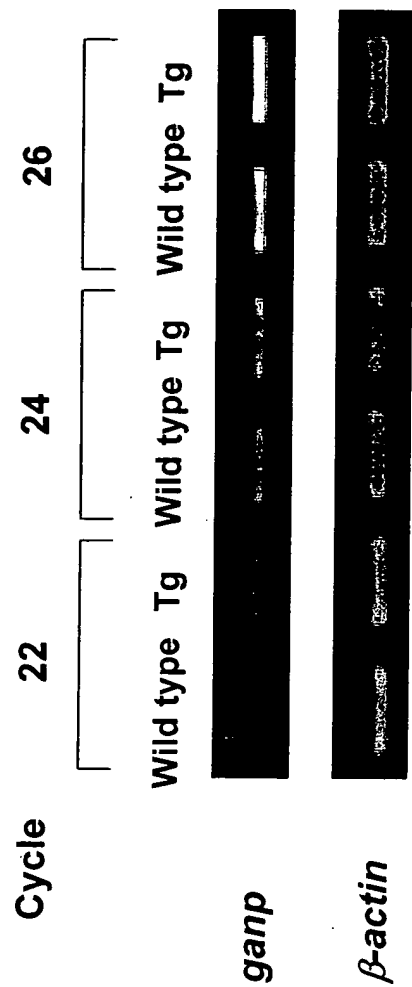


Fig. 10

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Q	V	Q	L	Q	Q	P	G	A	E	L	V	K	P	G	A	S	V	K	L	S	C	K	A	S	G	Y	T	F	T
CAG	GTC	CAA	CTG	CAG	CAG	CCT	GGG	GCT	GAG	CCT	GAG	CTT	GAG	CCT	GGG	CCT	TCA	GAG	CTG	TCC	TCC	AGG	GCT	TCT	GGC	TAC	ACC	TTC	ACC
WT-4	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
WT-5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
WT-6	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
WT-9	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
WT-10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
WT-11	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
WT-14	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
WT-16	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
WT-17	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
WT-18	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
WT-19	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
WT-20	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
WT-21	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
WT-22	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---



15/69

67	K	A	T	L	T	V	D	K	P	S	S	T	A	Y	M	Q	L	S	S	L	T	S	E	D	S	A	V	Y	C	A	R		
68	A	G	C	C	A	C	A	G	C	C	T	A	C	A	G	C	C	A	T	G	A	T	G	G	A	C	T	C	T	G	C	A	
69	A	G	C	C	A	C	A	G	C	C	T	A	C	A	G	C	C	A	T	G	A	T	G	G	A	C	T	C	T	G	C	A	
70	A	G	C	C	A	C	A	G	C	C	T	A	C	A	G	C	C	A	T	G	A	T	G	G	A	C	T	C	T	G	C	A	
71	A	G	C	C	A	C	A	G	C	C	T	A	C	A	G	C	C	A	T	G	A	T	G	G	A	C	T	C	T	G	C	A	
72	A	G	C	C	A	C	A	G	C	C	T	A	C	A	G	C	C	A	T	G	A	T	G	G	A	C	T	C	T	G	C	A	
73	A	G	C	C	A	C	A	G	C	C	T	A	C	A	G	C	C	A	T	G	A	T	G	G	A	C	T	C	T	G	C	A	
74	A	G	C	C	A	C	A	G	C	C	T	A	C	A	G	C	C	A	T	G	A	T	G	G	A	C	T	C	T	G	C	A	
75	A	G	C	C	A	C	A	G	C	C	T	A	C	A	G	C	C	A	T	G	A	T	G	G	A	C	T	C	T	G	C	A	
76	A	G	C	C	A	C	A	G	C	C	T	A	C	A	G	C	C	A	T	G	A	T	G	G	A	C	T	C	T	G	C	A	
77	A	G	C	C	A	C	A	G	C	C	T	A	C	A	G	C	C	A	T	G	A	T	G	G	A	C	T	C	T	G	C	A	
78	A	G	C	C	A	C	A	G	C	C	T	A	C	A	G	C	C	A	T	G	A	T	G	G	A	C	T	C	T	G	C	A	
79	A	G	C	C	A	C	A	G	C	C	T	A	C	A	G	C	C	A	T	G	A	T	G	G	A	C	T	C	T	G	C	A	
80	A	G	C	C	A	C	A	G	C	C	T	A	C	A	G	C	C	A	T	G	A	T	G	G	A	C	T	C	T	G	C	A	
81	A	G	C	C	A	C	A	G	C	C	T	A	C	A	G	C	C	A	T	G	A	T	G	G	A	C	T	C	T	G	C	A	
82	A	G	C	C	A	C	A	G	C	C	T	A	C	A	G	C	C	A	T	G	A	T	G	G	A	C	T	C	T	G	C	A	
83	A	G	C	C	A	C	A	G	C	C	T	A	C	A	G	C	C	A	T	G	A	T	G	G	A	C	T	C	T	G	C	A	
84	A	G	C	C	A	C	A	G	C	C	T	A	C	A	G	C	C	A	T	G	A	T	G	G	A	C	T	C	T	G	C	A	
85	A	G	C	C	A	C	A	G	C	C	T	A	C	A	G	C	C	A	T	G	A	T	G	G	A	C	T	C	T	G	C	A	
86	A	G	C	C	A	C	A	G	C	C	T	A	C	A	G	C	C	A	T	G	A	T	G	G	A	C	T	C	T	G	C	A	
87	A	G	C	C	A	C	A	G	C	C	T	A	C	A	G	C	C	A	T	G	A	T	G	G	A	C	T	C	T	G	C	A	
88	A	G	C	C	A	C	A	G	C	C	T	A	C	A	G	C	C	A	T	G	A	T	G	G	A	C	T	C	T	G	C	A	
89	A	G	C	C	A	C	A	G	C	C	T	A	C	A	G	C	C	A	T	G	A	T	G	G	A	C	T	C	T				

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30  
 Q V Q L Q Q P G A E L V K P G A S V K L S C K A S G Y T F T  
 CAG GTC CAA CTG CAG CAG CCT GGG GCT CAG CTT GTG ANG CCG CCT TCA GTG AAG CTG TTC TTC ACC TTC ACC

Tg-3---  
 Tg-4---  
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 Tg-17---  
 Tg-18---  
 Tg-20---  
 Tg-21---  
 Tg-23---

Tg

4

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Fig. 11A

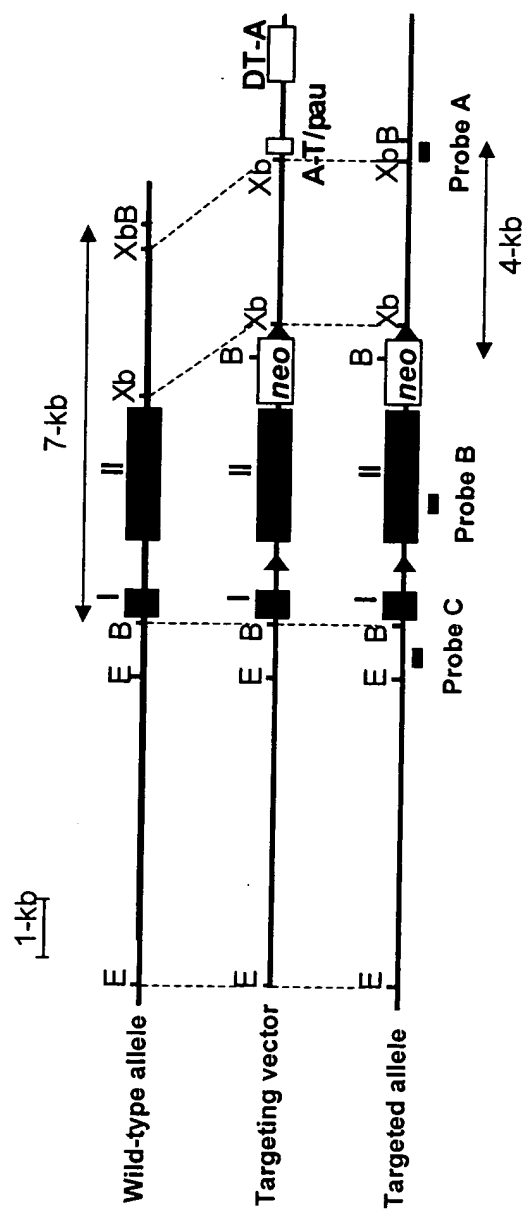


Fig. 11B

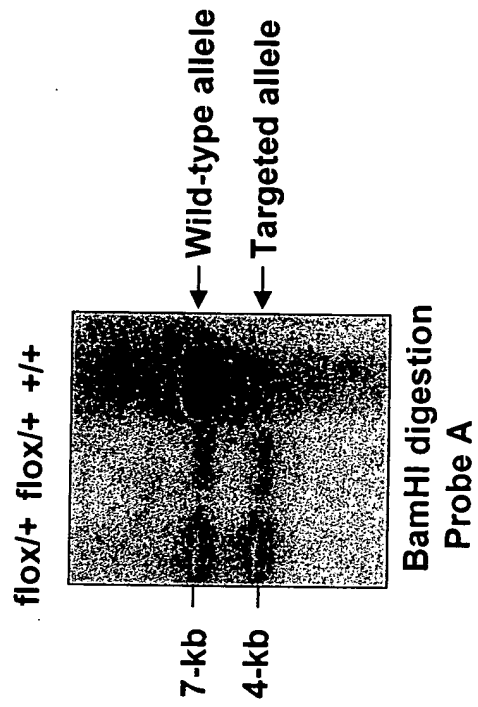


Fig. 11C

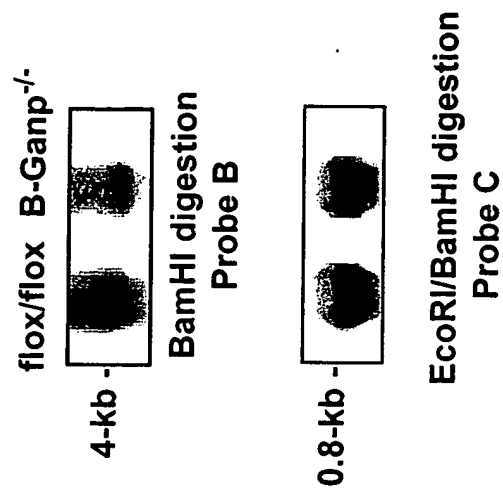




Fig. 11D

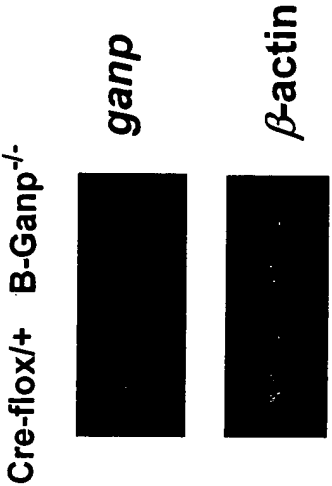


Fig. 11E

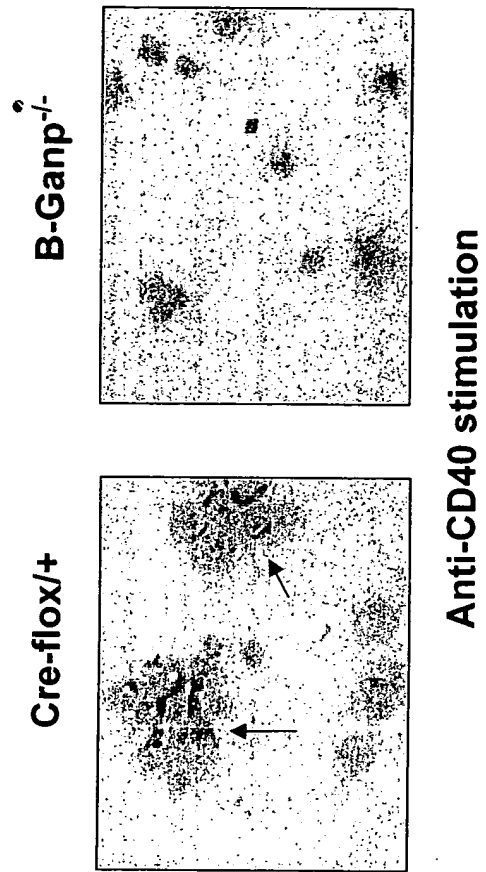


Fig. 12

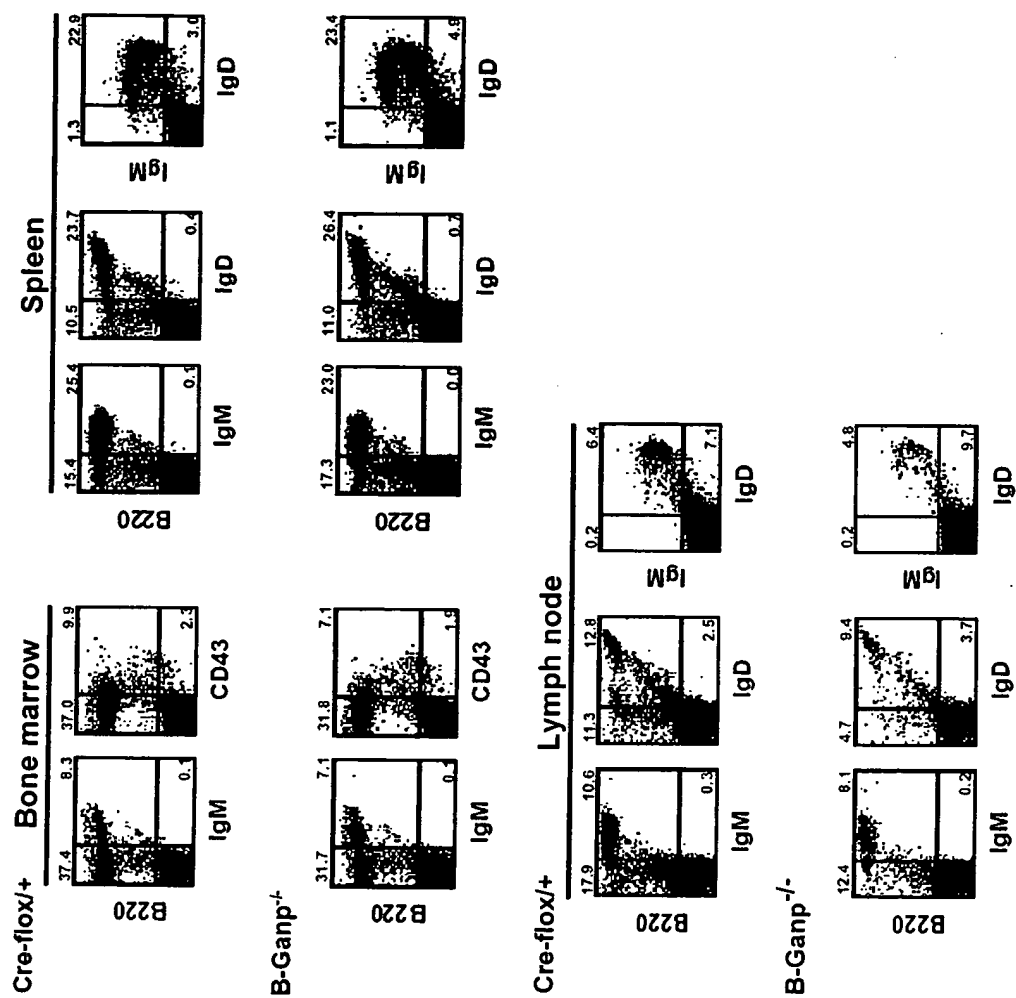


Fig. 13

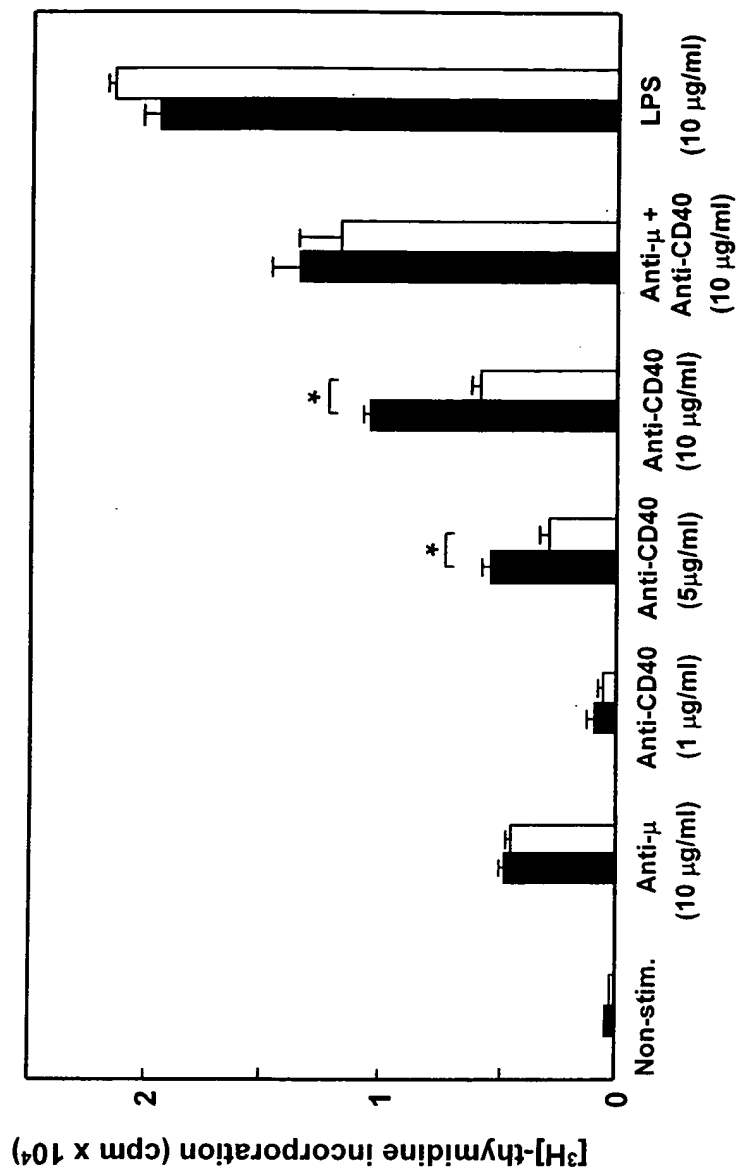


Fig. 14

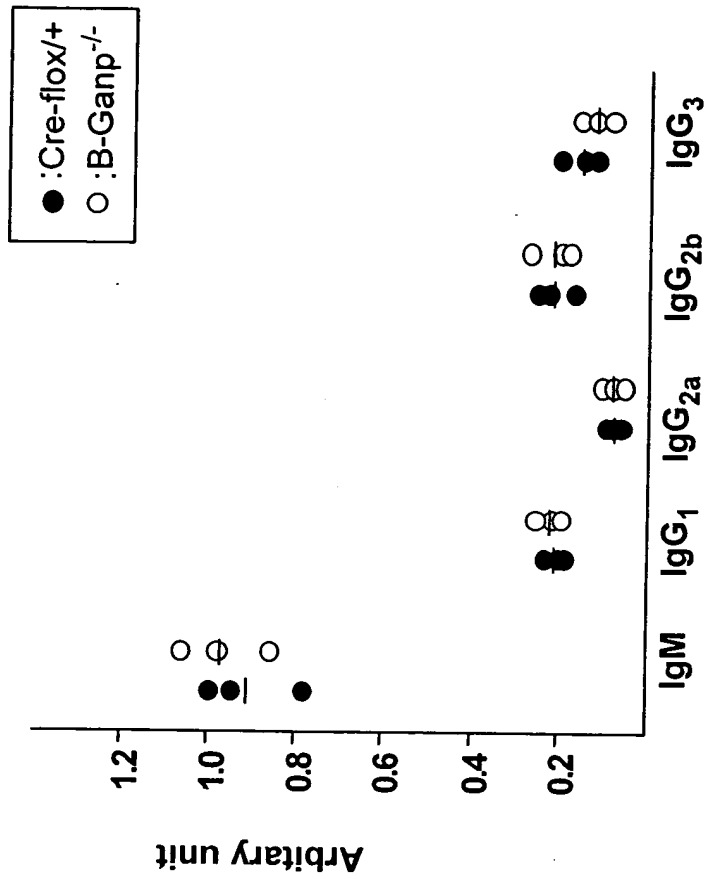


Fig. 15

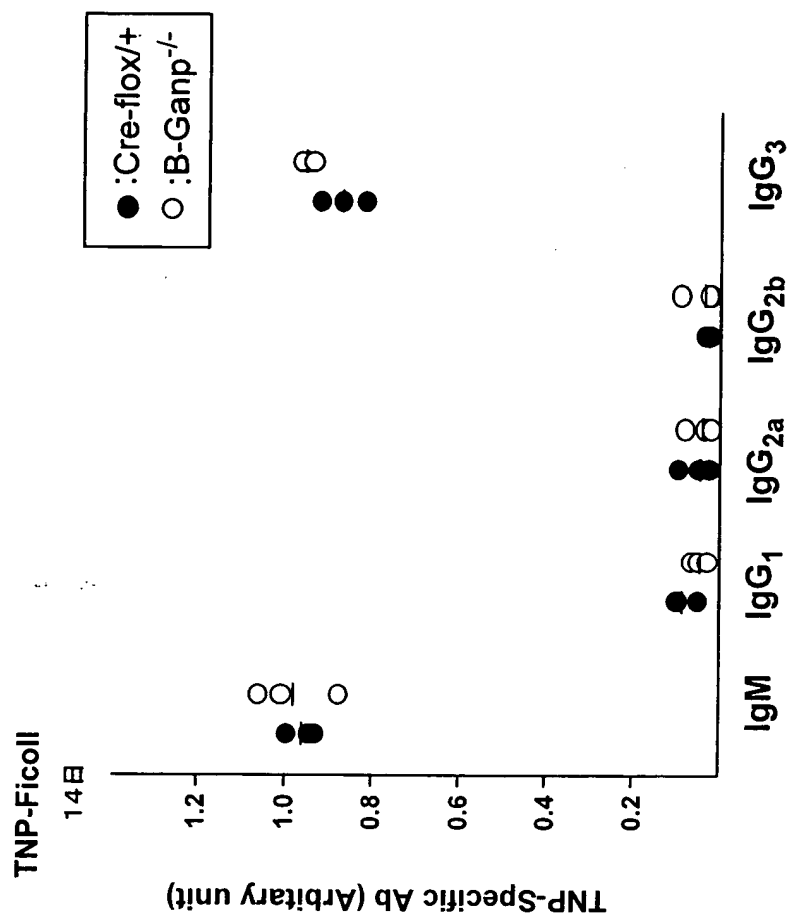


Fig. 16

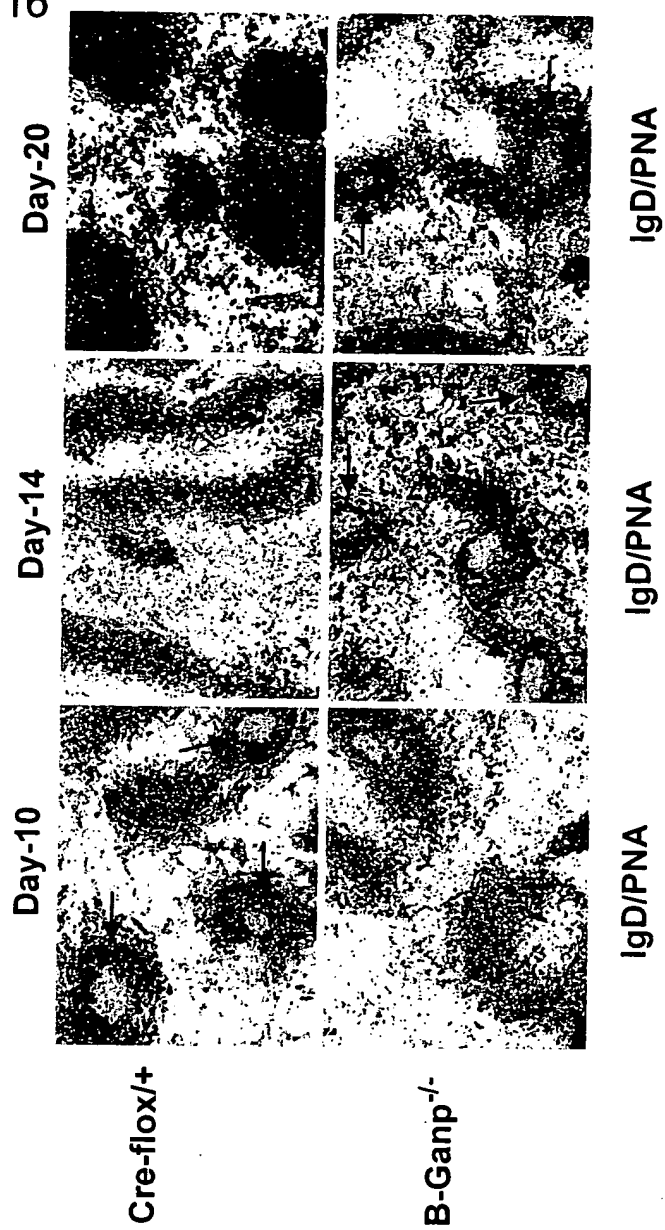


Fig. 17

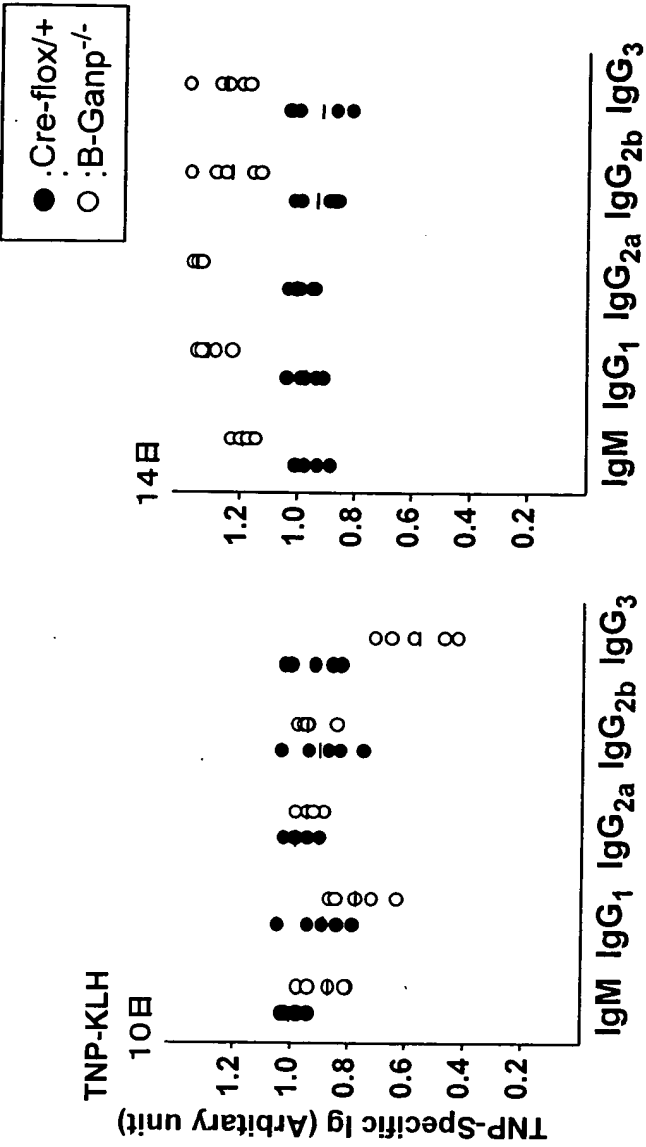




Fig. 18

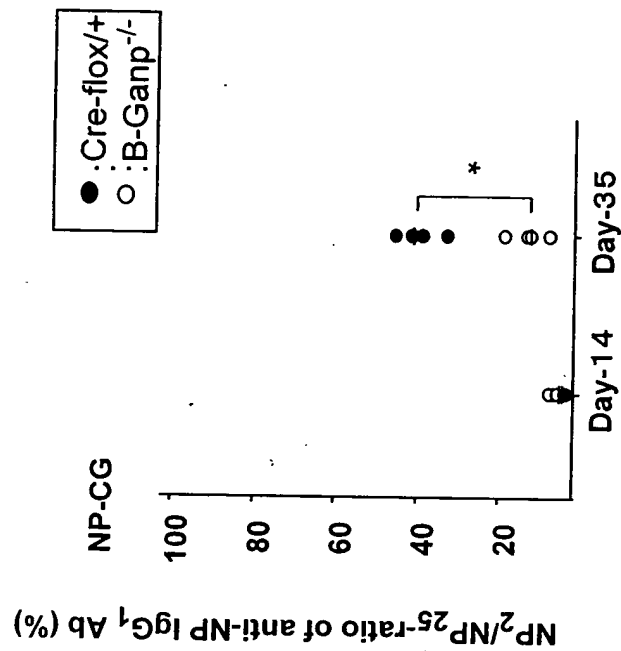


Fig. 19

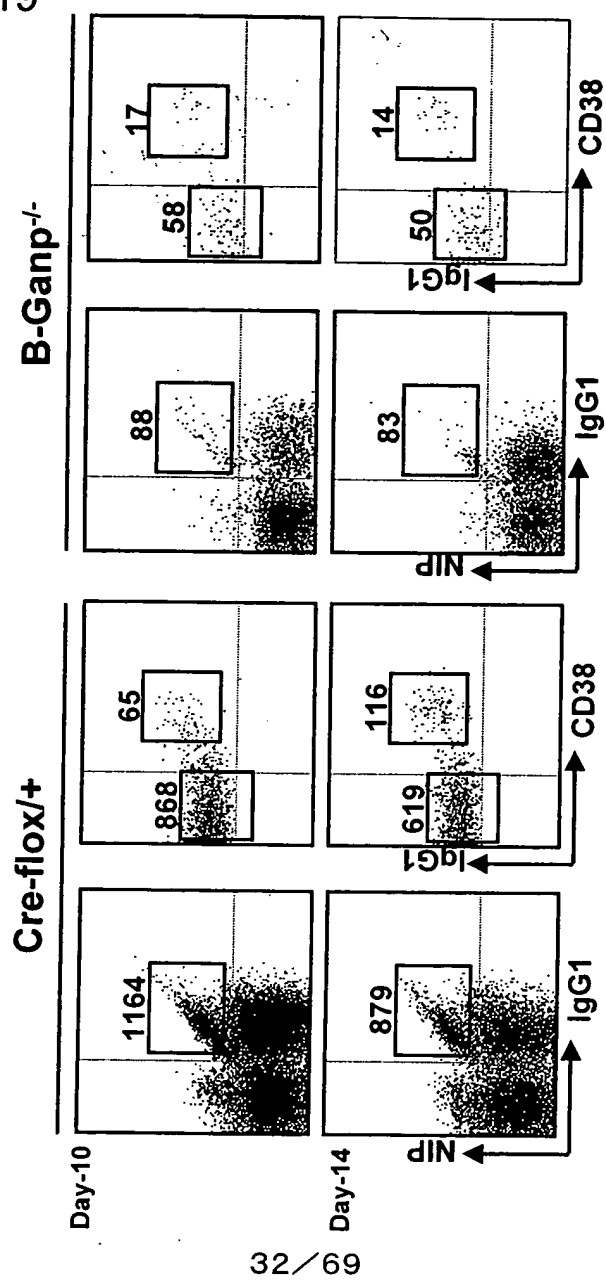


Fig. 20A

Cre-flox/+

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	Q	V	Q	L	Q	Q	P	G	A	E	L	V	K	P	G	A	S
	CAG	GTC	CAA	CTG	CAG	CAG	CCT	GGG	GCT	GAG	CTT	GTG	AAG	CCT	GGG	GCT	TCA
1-5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1-6	---	---	---	---	---	---	---	---	---	A	---	---	---	---	---	---	---
3-1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
3-2	---	---	---	---	---	---	---	---	---	---	---	---	R	---	---	---	---
	---	---	---	---	---	---	---	---	---	---	---	---	G	---	---	---	---
3-3	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	G	---
4-2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	G	---
	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	G	---
4-4	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	G	---
4-6	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1-8	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1-10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	G	---
4-7	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	G	---
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6-1	---	---	---	---	---	---	---	---	T	---	---	---	---	---	---	---	---
	---	---	---	---	---	---	---	---	A	---	---	---	---	---	---	---	---
6-2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
7-1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
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Fig. 20B

Cre-flox/+

18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
V	K	L	S	C	K	A	S	G	Y	T	F	T	S	Y	W	M	H
GTG	AAG	CTG	TCC	TGC	AAG	GCT	TCT	GGC	TAC	ACC	TTC	ACC	AGC	TAC	TGG	ATG	CAC
	I							A									
---	-TT	---	---	---	---	---	---	-C	---	---	---	---	---	-T	---	---	---
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---	---	---	---	---	---	---	---	---	---	---	---	---	---	-T	A	---	---
---	---	---	---	---	---	---	---	---	---	---	---	---	T	---	L	I	---
---	---	---	---	---	---	---	---	---	---	---	---	---	-C	---	-T	-T	---
---	---	---	---	---	---	---	---	---	I	---	---	---	---	*	---	---	---
---	-C	---	---	---	---	---	---	---	-A	-TT	---	---	---	-G	---	---	---
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---	---	---	---	---	---	---	---	-T	---	---	L	---	T	---	-TA	---	---
---	---	---	---	---	---	---	---	---	---	---	L	---	T	---	L	---	---
---	---	---	---	---	---	---	---	---	---	---	-C	---	-C	---	-TA	---	---
---	---	---	---	---	---	---	---	---	---	---	L	---	T	---	L	---	---
---	---	---	---	---	---	---	---	---	---	---	-C	---	-C	---	-TA	---	---
---	---	---	---	---	---	---	---	---	---	---	---	---	T	---	L	---	---
---	---	---	---	---	---	---	---	---	---	---	---	---	-C	---	-T	-A	---
---	---	---	---	---	---	---	---	---	---	---	---	---	T	---	L	---	---
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---	---	---	---	---	---	---	---	---	L	---	---	---	T	---	L	---	---
---	---	---	---	---	---	---	---	---	-C	---	---	---	-C	---	-TA	---	---
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	L	---	---
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---	V	---	---	---	---	---	---	---	---	---	---	---	---	---	L	---	---
---	G	---	---	---	---	---	---	---	---	---	---	---	---	---	-T	---	---
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**Cre-flox/+**

A

Fig. 20D

Cre-flox/+

	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67
	R	I	D	P	N	S	G	G	T	K	Y	N	E	K	F	K	S	K
	AGG	ATT	GAT	CCT	AAT	AGT	GGT	GGT	ACT	AAG	TAC	AAT	GAG	AAG	TTC	AAG	AGC	AAG
1-5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1-6	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
3-1	---	---	---	---	---	---	---	D -A-	-A-	---	---	---	---	---	---	---	---	---
3-2	---	---	---	M -TG	---	---	---	S -C	R -G-	---	---	---	---	Y T-C	---	---	---	---
3-3	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
4-2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
4-4	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
4-6	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1-8	---	---	---	K -A-	---	---	---	---	---	---	---	S -G-	---	---	---	---	---	---
1-10	V G-	---	---	---	T -C-	---	---	---	---	---	---	---	---	---	---	---	---	---
4-7	---	---	---	---	---	---	---	D -A-	---	---	---	---	---	---	---	---	---	---
6-1	---	---	---	---	---	---	---	---	---	---	---	---	T -C-	---	---	N -A-	---	---
6-2	---	---	---	---	---	---	---	S A-	---	---	---	---	---	---	---	---	T -C-	---
7-1	---	---	---	---	---	---	---	---	---	---	---	---	T -C-	---	---	N -A-	---	---

**Cre-flox/+**

T

I  
A  
I  
A  
I  
A

Q C F T N A

T

**Cre-flox/+**

T D  
 A G  
 G  
 G  
 G



Fig. 20G

B-Ganp<sup>-/-</sup>

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Q	V	Q	L	Q	Q	P	G	A	E	L	V	K	P	G	A	S
CAG	GTC	CAA	CTG	CAG	CAG	CCT	GGG	GCT	GAG	CTT	GTG	AAG	CCT	GGG	GCT	TCA

1-1 ---

1-5 ---

1-6 ---

2-2 ---

2-3 ---

4-3 --- T  
A --- A --- G ---

4-4 ---

6-1 ---

6-2 ---

7-1 ---

8-1 ---

8-2 ---

9-1 ---

9-3 ---

9-4 ---

Fig. 20H

B-Ganp<sup>-/-</sup>

18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
V	K	L	S	C	K	A	S	G	Y	T	F	T	S	Y	W	M	H
GTG	AAG	CTG	TCC	TGC	AAG	GCT	TCT	GGC	TAC	ACC	TTC	ACC	AGC	TAC	TGG	ATG	CAC
-----																	
	I							A									
--	-TT	--	--	--	--	--	--	-C-	--	--	--	--	--	-T	--	--	--
-----																	
													N				
--	--	--	--	--	--	--	-G	--	--	--	--	--	-A-	-T	--	--	--
-----																	
													N				
--	--	--	--	--	--	--	--	--	--	--	--	--	-A-	--			
-----																	
															L		
--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	-T-	--	--
-----																	
													N				
--	--	--	--	--	--	--	--	--	--	--	--	--	-A-	--			
-----																	
											F						
--	--	--	--	--	--	--	--	--	--	-T	-A	--	--	--			
-----																	
											F						
--	--	--	--	--	--	--	--	--	--	-T	-A	--	--	--			
-----																	
														C			
--	--	--	--	--	--	--	--	--	--	--	--	--	--	-G-	--		
-----																	
													N		L		
--	--	--	--	--	--	--	--	--	--	--	--	--	-A-	--	-T-	--	--
-----																	
--	--	--	--	--	--	T	--	--	--	--	--	--	N				
-----																	
						A	--	--	--	--	--	--	-A-			L	
-----																	
													T			C	
--	--	--	--	--	--	-C-	--	--	--	--	--	--	-C-	--	--	--	--
-----																	
--	--	--	--	--	--	--	--	--	--	--	--	--	-T	--			

**B-Ganp<sup>-/-</sup>**

—6

Fig. 20J

B-Ganp<sup>-/-</sup>

	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65
	R	I	D	P	N	S	G	G	T	K	Y	N	E	K	F	K
	AGG	ATT	GAT	CCT	AAT	AGT	GGT	GGT	ACT	AAG	TAC	AAT	GAG	AAG	TTC	AAG
1-1	---	---	---	---	K -A-	---	---	---	---	---	---	---	---	---	---	---
1-5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1-6	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
2-2	---	---	---	---	---	---	---	---	S T-	---	---	---	---	---	---	---
2-3	N -T	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
4-3	N -AT	N A-	---	---	---	---	---	---	---	N -C	---	---	---	---	---	---
4-4	---	---	---	---	G G-	---	---	---	---	---	---	---	---	---	---	---
6-1	---	---	---	---	---	---	---	---	---	---	---	---	E G-	---	---	---
6-2	---	---	---	---	---	---	---	---	---	---	---	T -	---	---	---	---
7-1	---	---	---	---	G G-	---	---	---	---	F -T	D G-	---	---	---	---	---
8-1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
8-2	---	---	---	---	G G-	---	---	---	---	---	A -	---	E G-	---	---	---
9-1	---	---	---	---	---	---	---	A G-C	---	---	---	---	---	---	---	---
9-3	---	---	---	---	---	---	---	C -	---	---	---	---	---	---	---	---
9-4	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

**B-Ganp<sup>-/-</sup>**

--T--  
---  
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---  
A  
A  
C  
N  
A  
A  
G  
S  
T  
T  
C  
T  
A  
T  
S  
T

**B-Ganp<sup>-/-</sup>**

C

C

C

C

C

F

T

Fig. 21

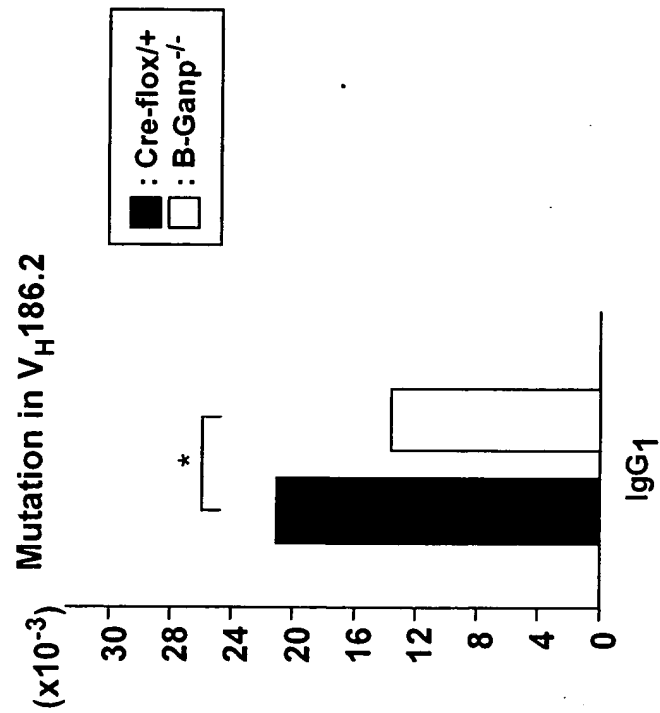


Fig: 22

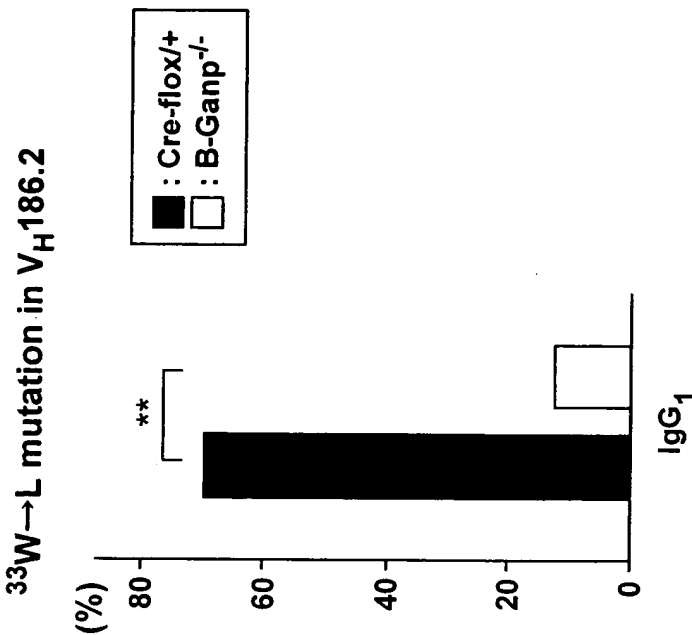




Fig. 23

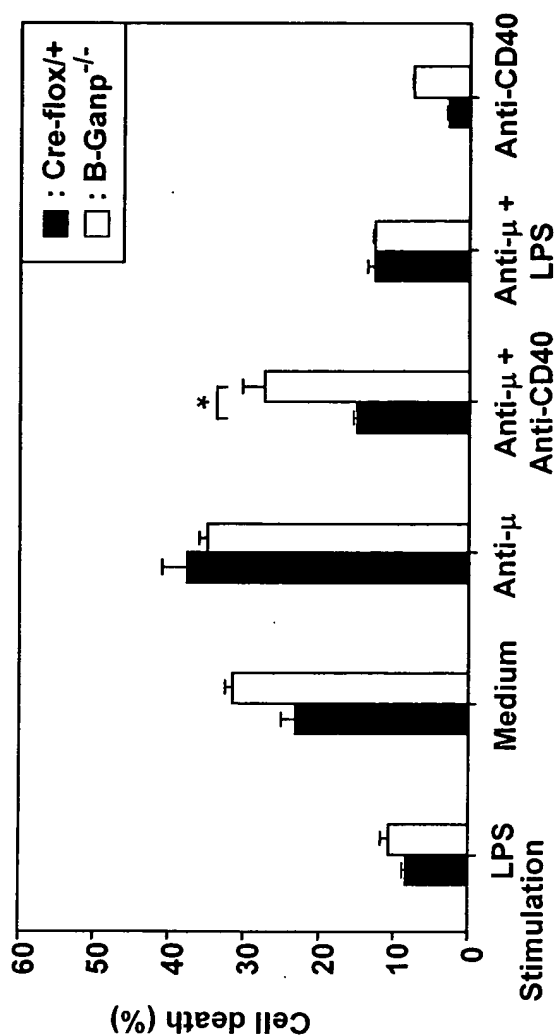


Fig. 24

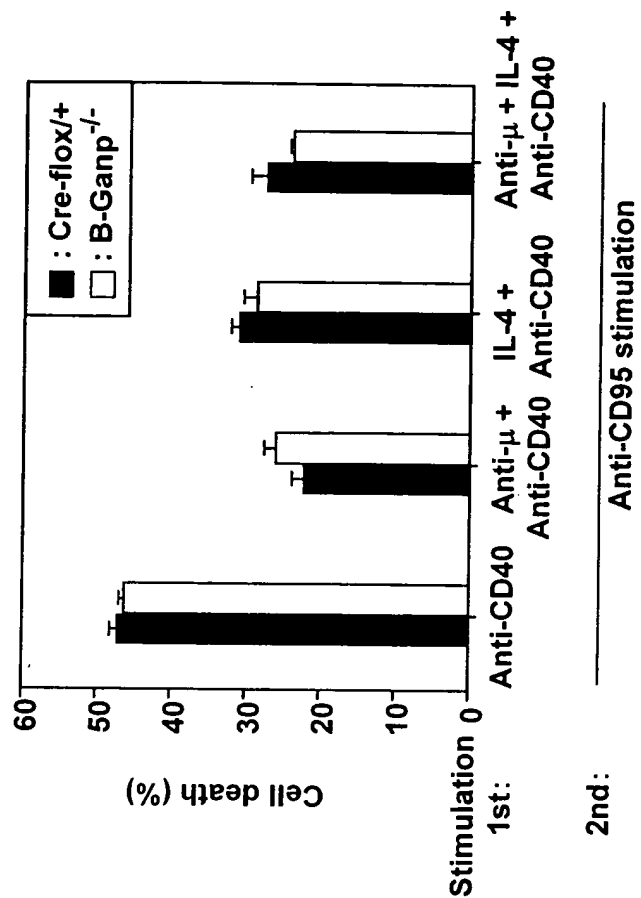


Fig. 25

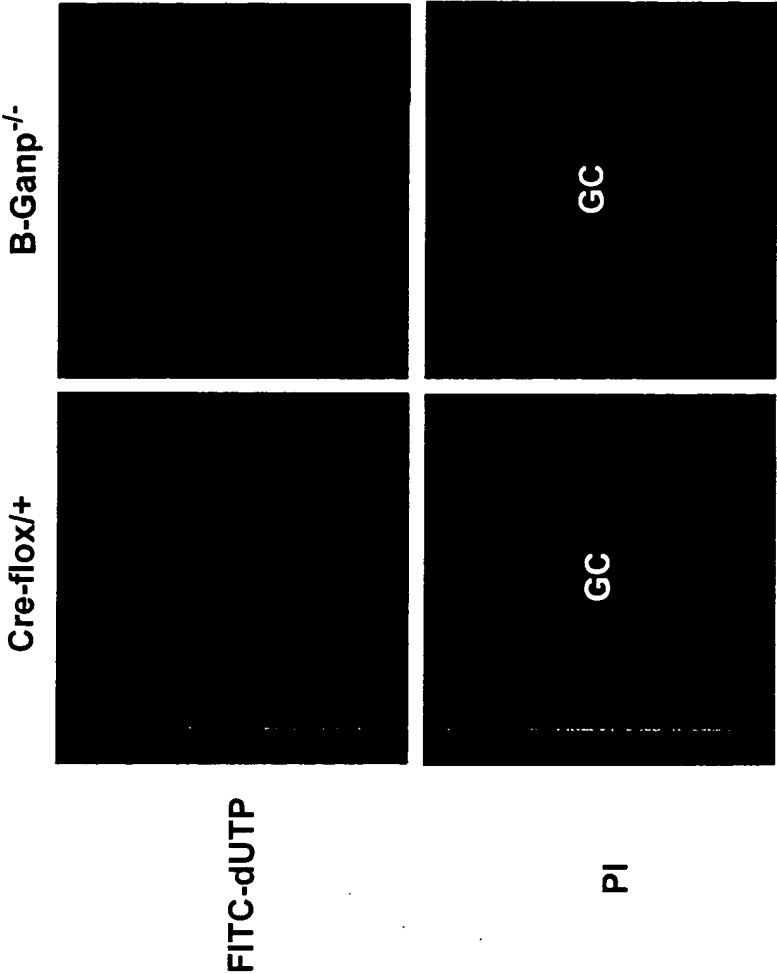


Fig. 26

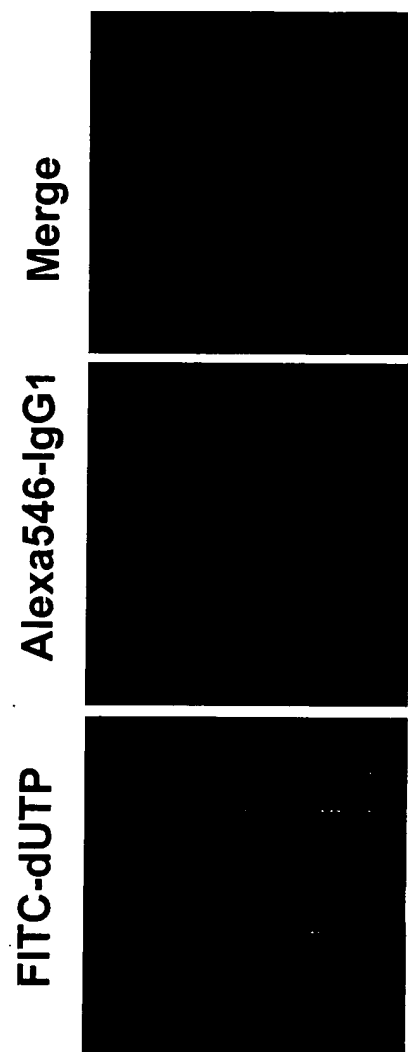


Fig. 27

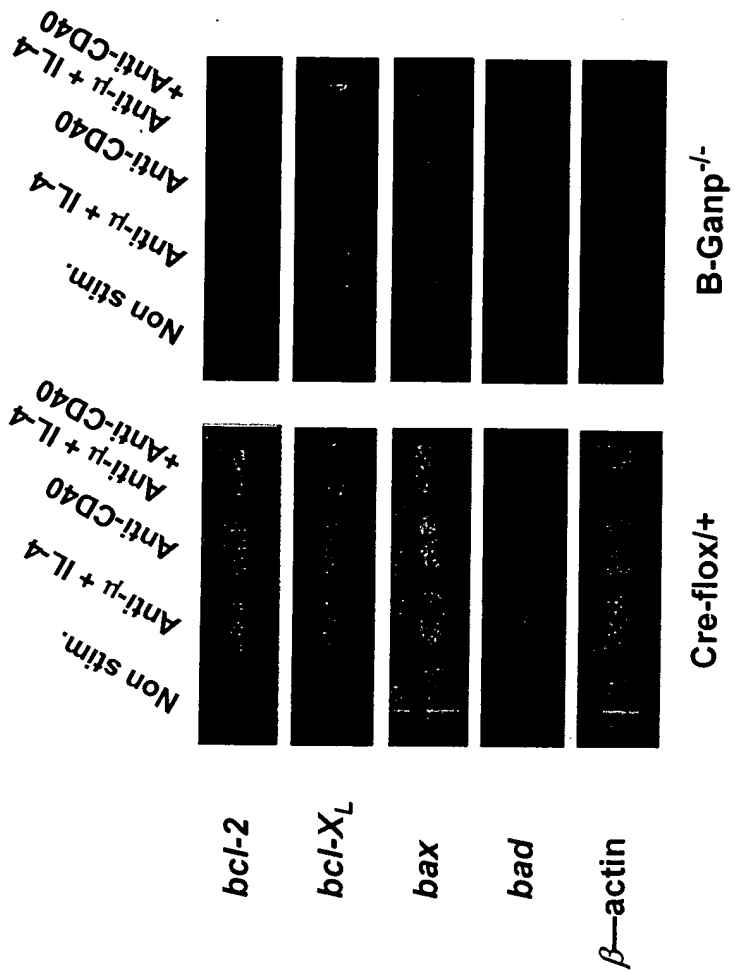


Fig. 28

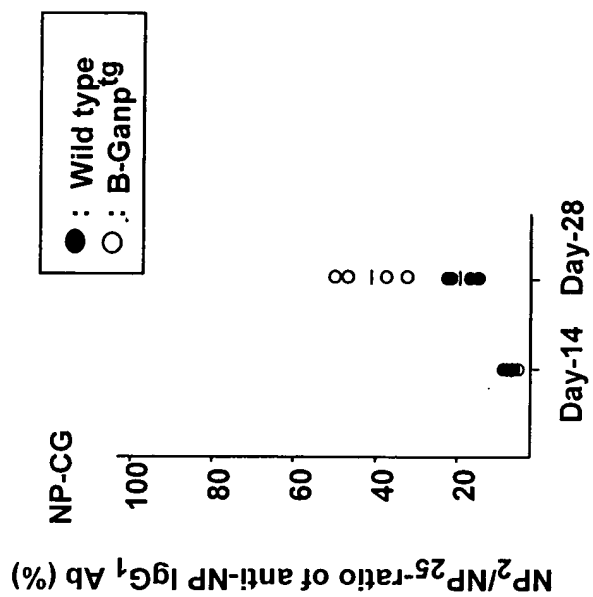


Fig. 29

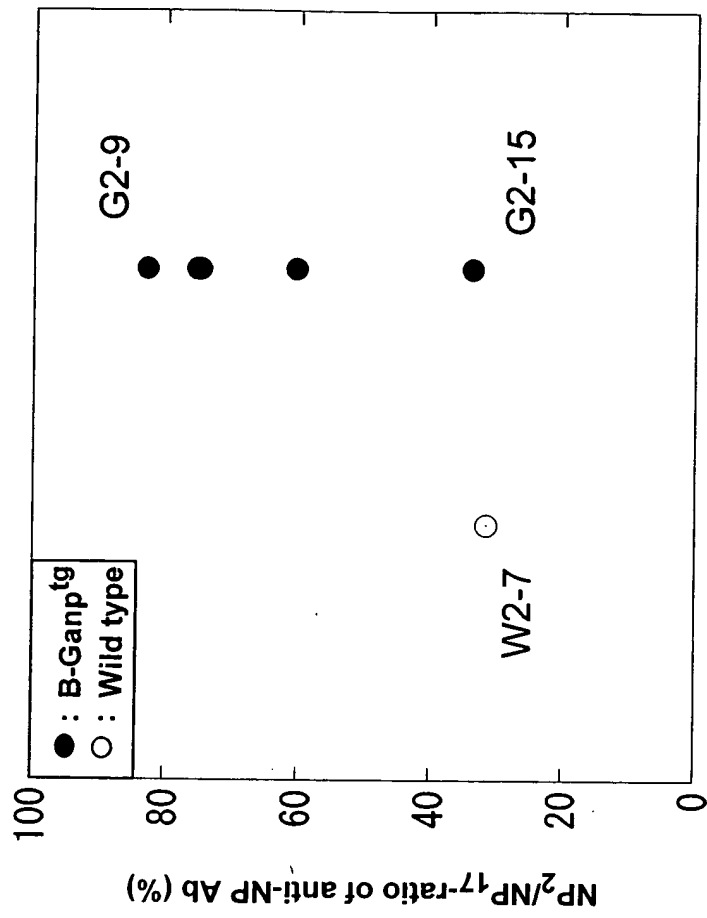
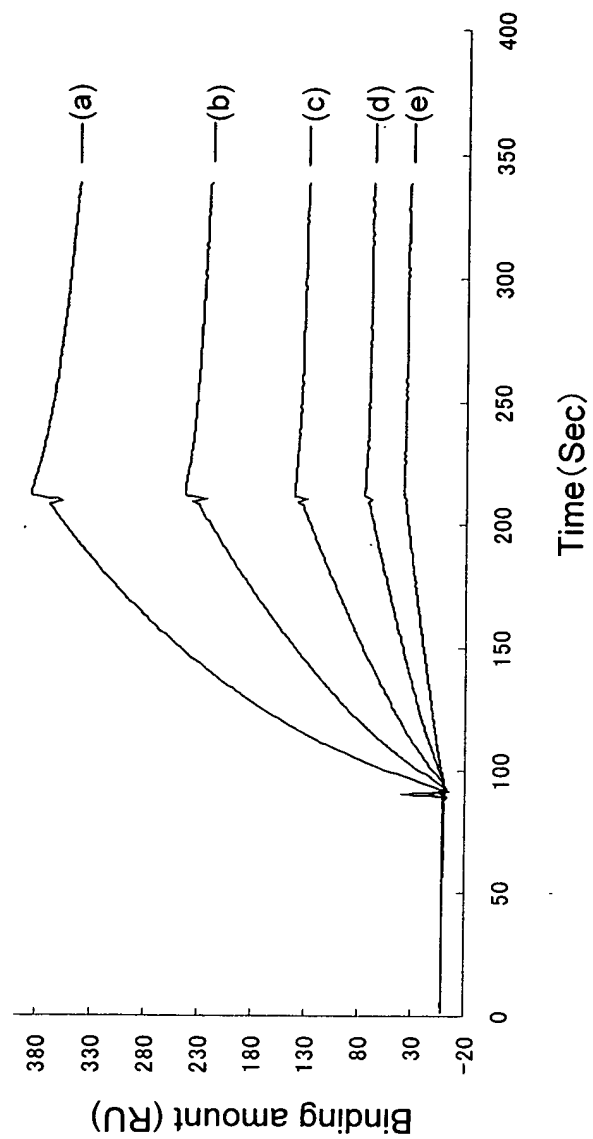


Fig. 30

BIACORE (G2-9, IgG1,  $\kappa$ )





BIACORE (G2-15, IgG1,  $\lambda$ )

Fig. 31

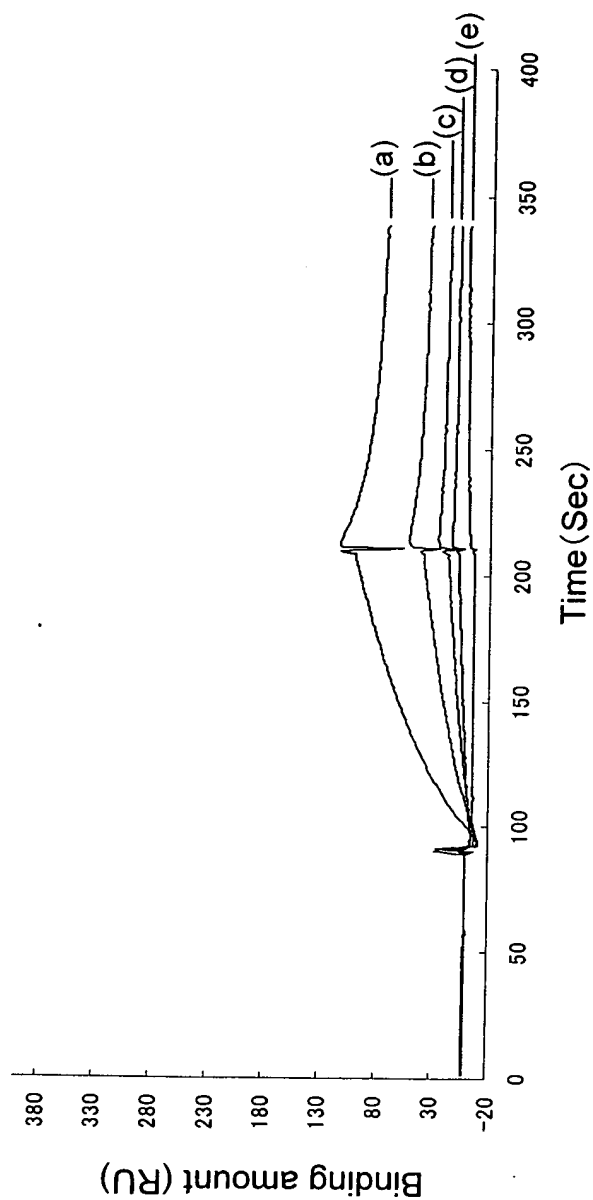


Fig. 32

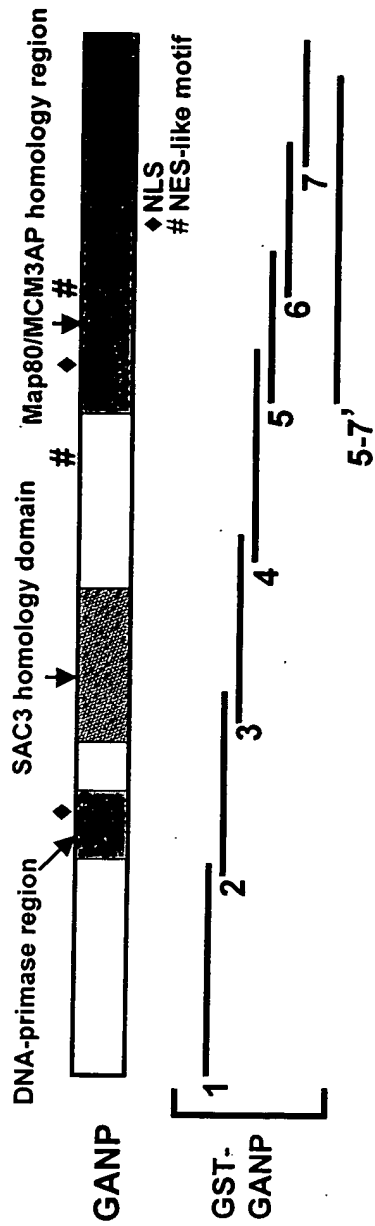


Fig. 33

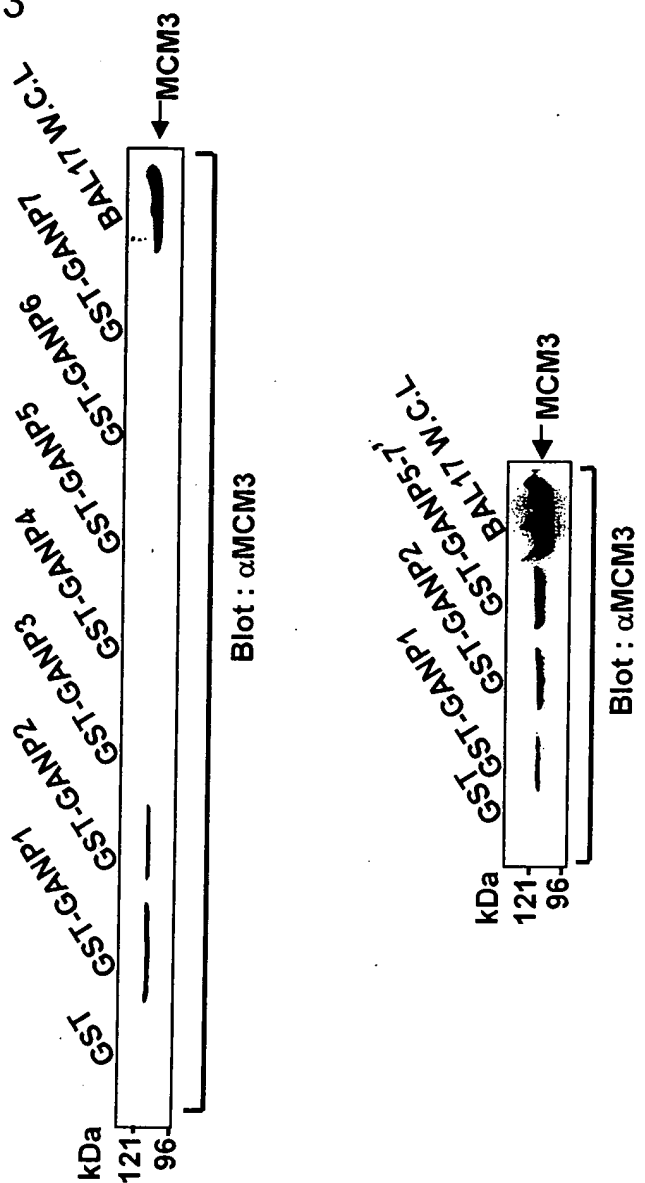


Fig. 34

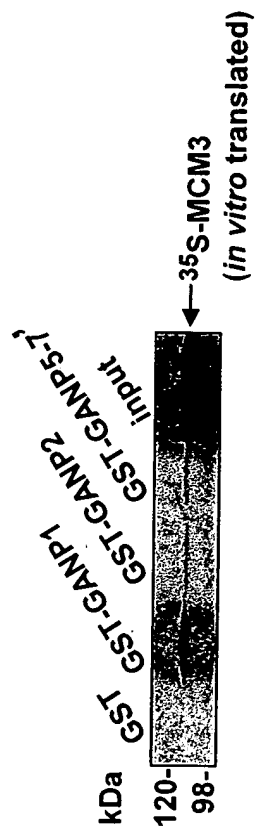


Fig. 35

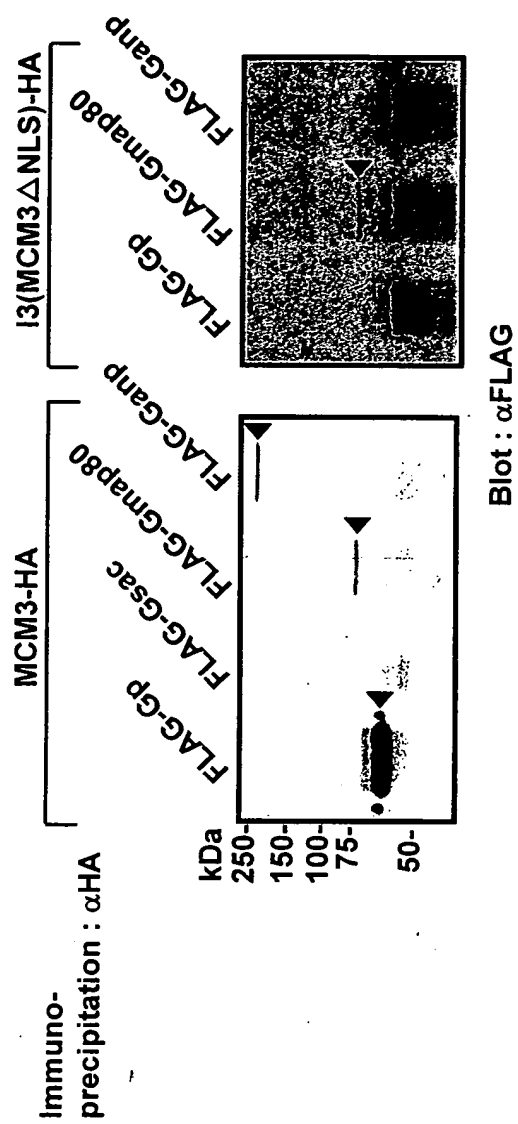


Fig. 36A

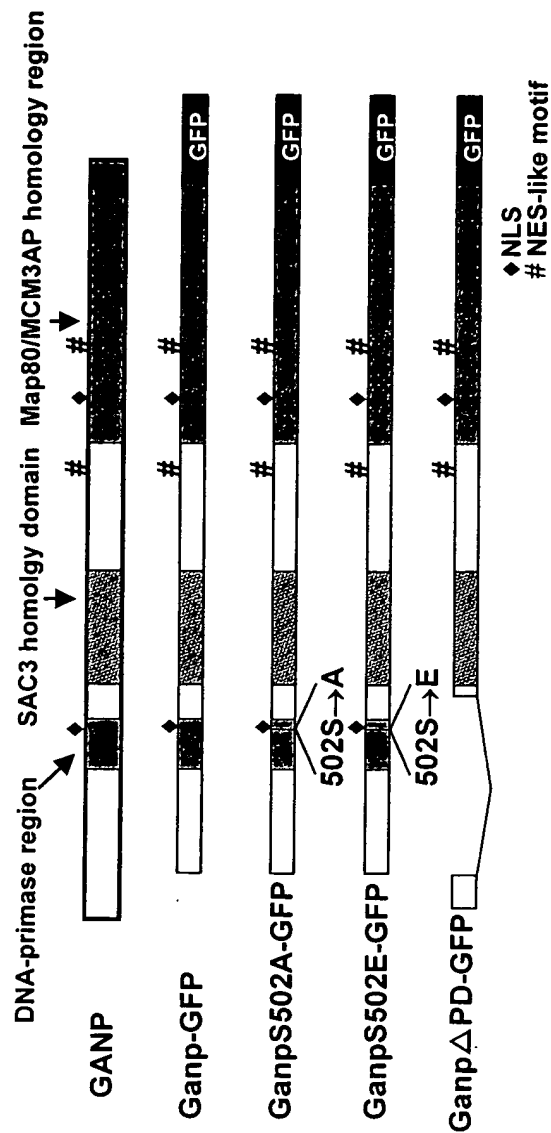


Fig. 36B

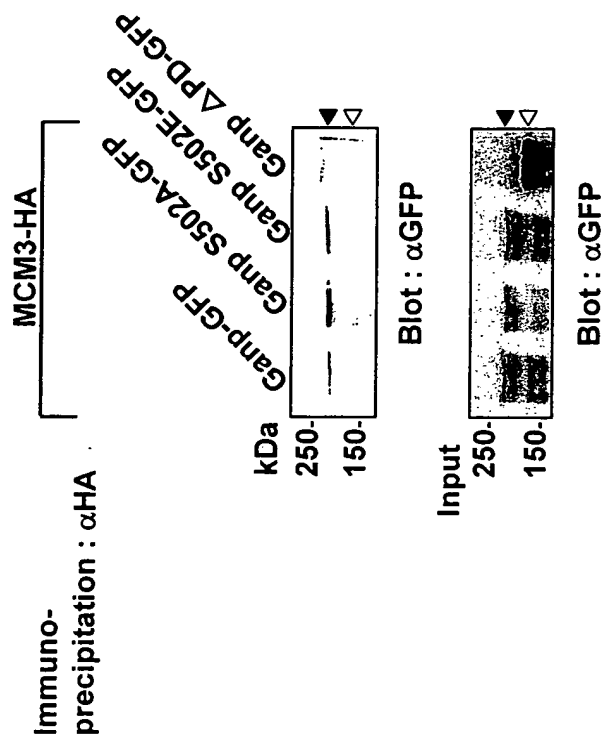
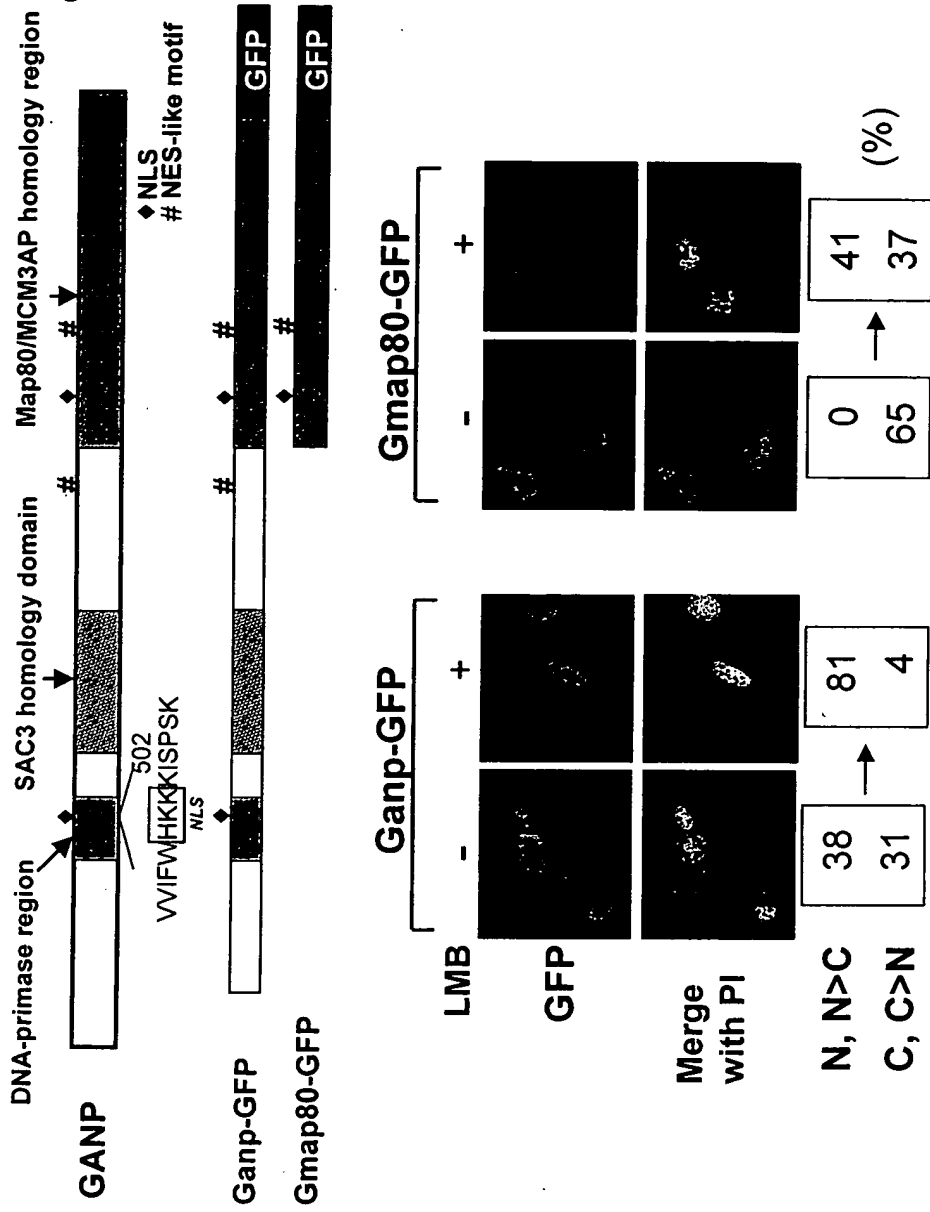


Fig. 37





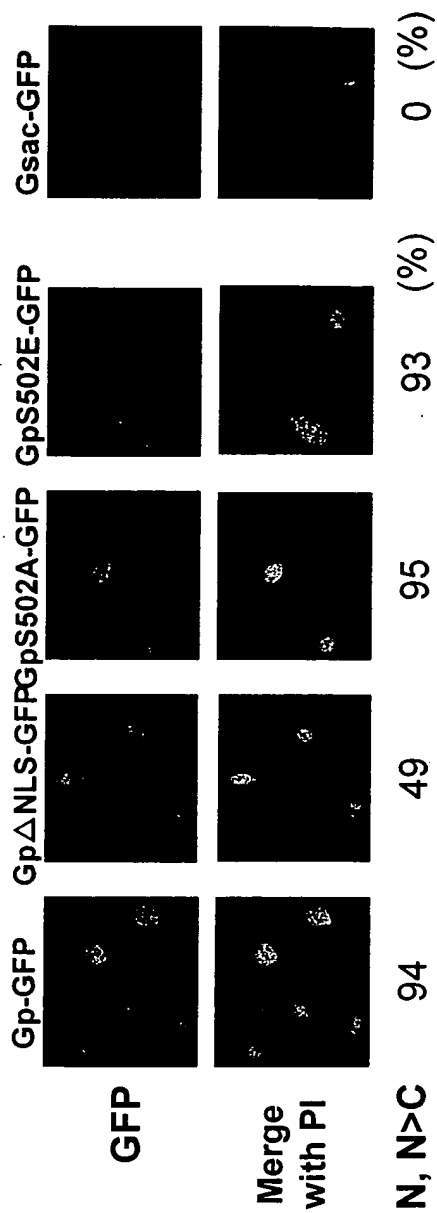
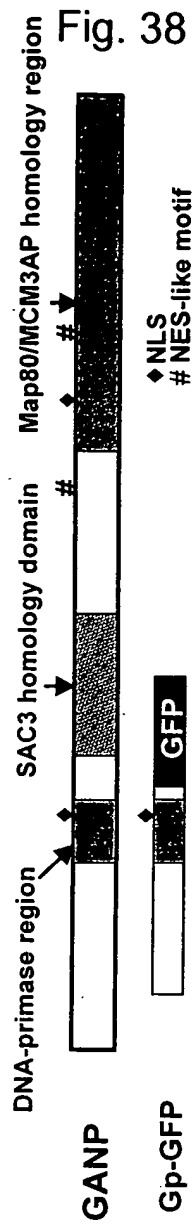


Fig. 39

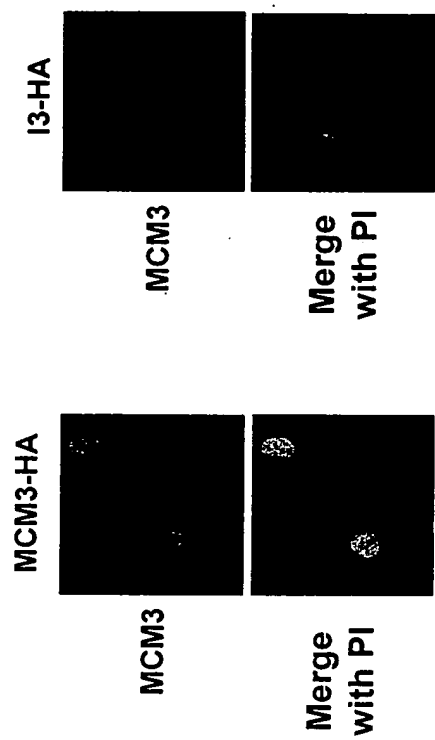


Fig. 40

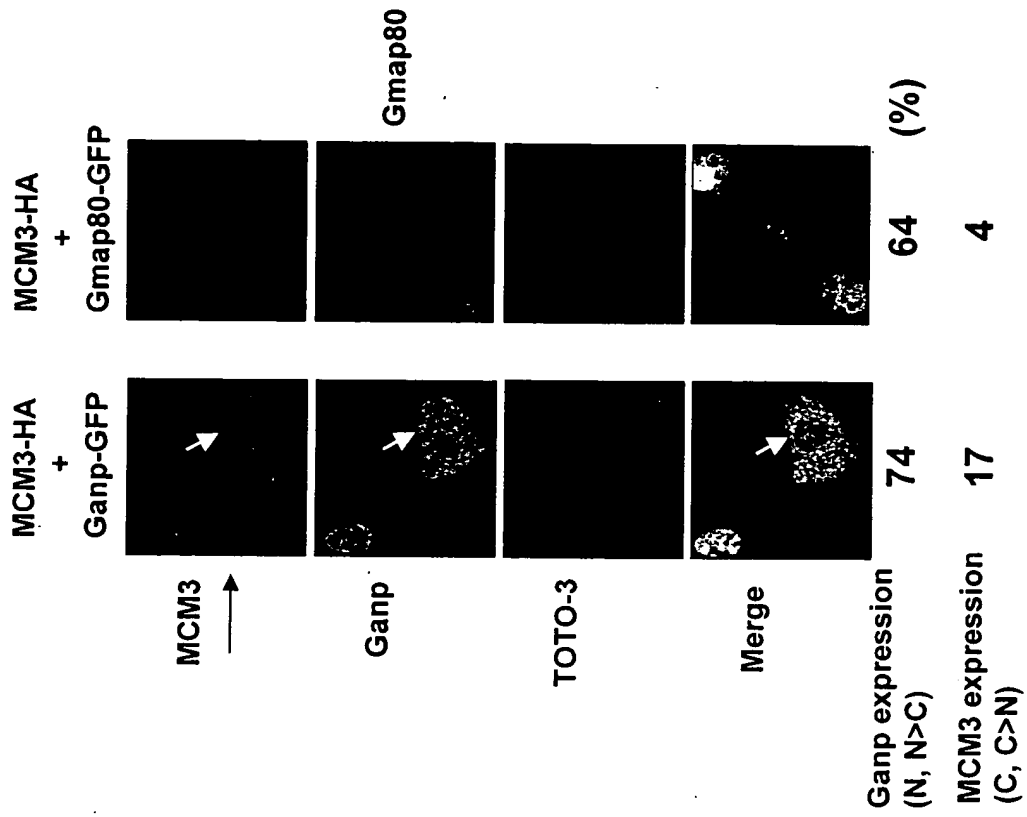


Fig. 41

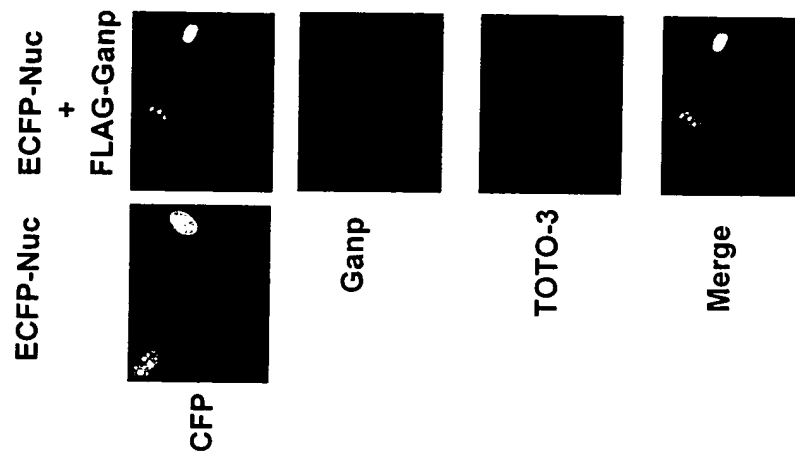


Fig. 42

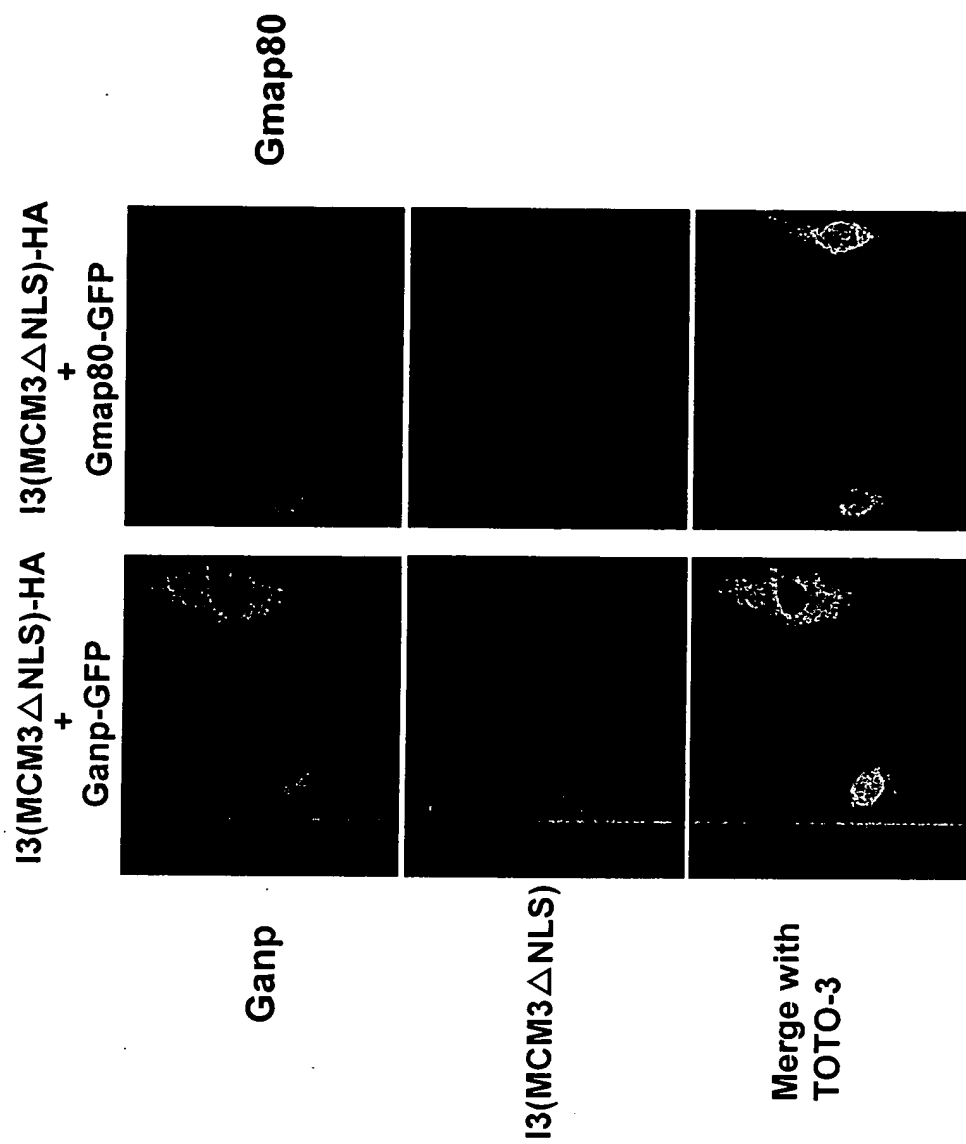


Fig. 43

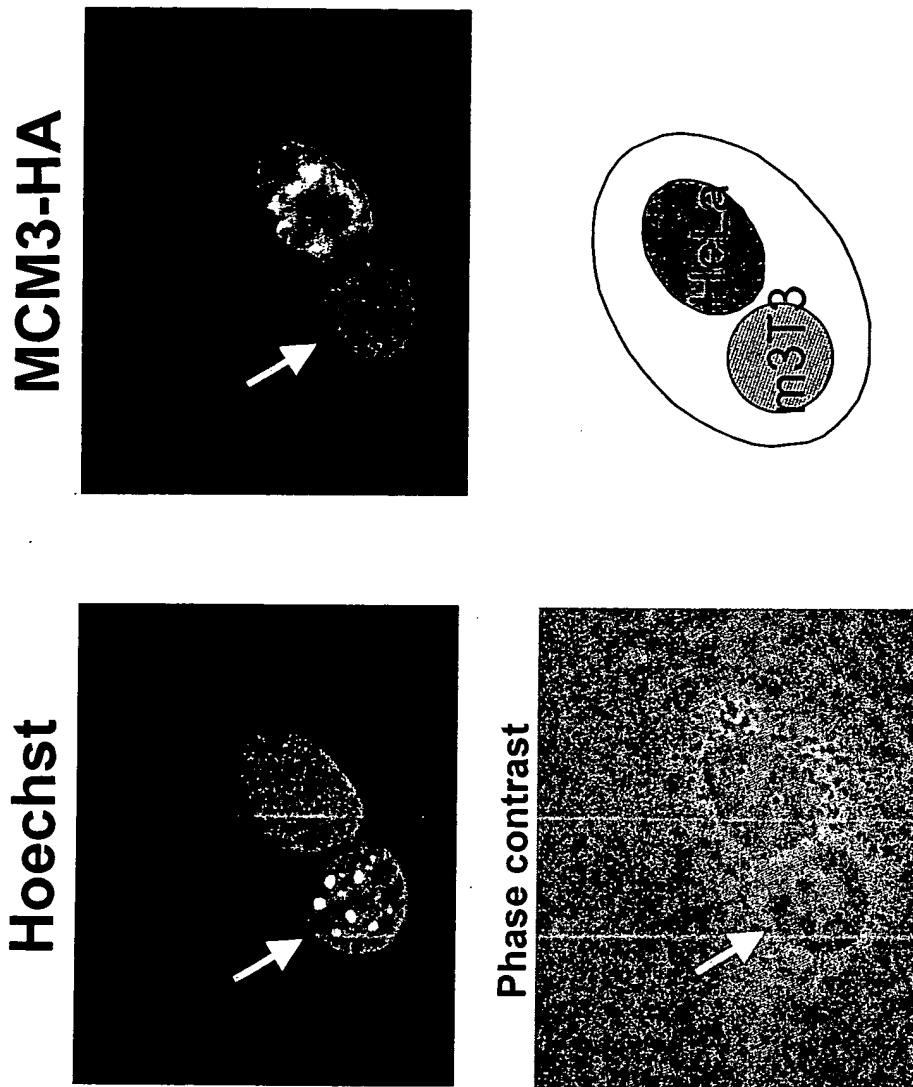


Fig. 44

